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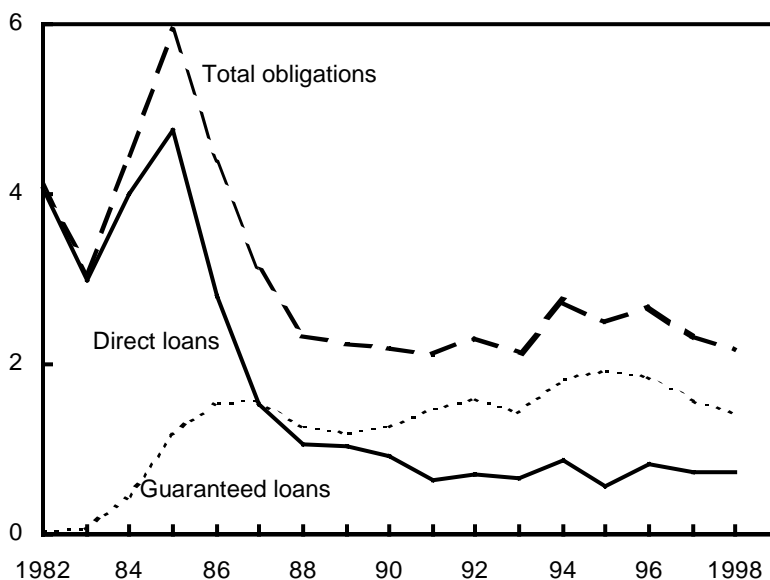
AIS-71  
February 1999

# Agricultural Income and Finance

## Situation and Outlook Report

**Farm Service Agency farmer program loan obligations**

\$ billion



Annual Lender Issue

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## Summary

Low prices for many key agricultural commodities and significant weather and disease problems in some regions have created concerns among farmers and their lenders about the ability of some farmers to repay new or existing loans. Many of the concerns focus on farmers' ability to obtain and retain production credit. While net cash farm income has been strong in recent years and is forecast to be above the 1990-98 average in 1999, last year saw increasing variability in farm sector economic performance by region and commodity. While production of many farm commodities remained high, substantial price declines led to lower income for many farmers, particularly those specializing in corn, wheat, soybeans, and hogs. But numerous farm subsectors were profitable in 1998, and dairy, broilers, cattle, vegetables, fruits, nursery, and greenhouse products have a favorable outlook for 1999.

Financial institutions serving agriculture continued to experience improved conditions in 1998 and some additional gains are expected in 1999. The position of agricultural lenders reflects the generally healthy state of farmers' finances in recent years. All commercial lender groups continue to experience historically low levels of delinquencies, foreclosures, net loan charge-offs, and loan restructuring. These aggregate farm lender indicators will remain favorable, barring a sustained increase in farm financial stress. It is unknown how long commodity prices will remain low, but there is little indication of a problem in the national farm lender performance data to date. However, there is a lag before any significant farm financial stress appears in the national data.

Total farm business debt at yearend 1998 is estimated at \$170.4 billion, up 3.0 percent after increasing 6.0 percent in 1997. The dollar volume of farm loans outstanding expanded for all lender categories, except the Farm Service Agency (FSA). Farm loan volume held by commercial banks and the Farm Credit System (FCS) expanded 4.4 and 3.8 percent, respectively. Commercial banks and the FCS accounted for 60 and 32.5 percent, respectively, of the estimated \$4.95-billion increase in farm lending in 1998. Commercial banks have gained farm debt market share for 13 of the past 14 years and now hold 41.1 percent of outstanding farm business debt. FCS market share during the same span dropped for 10 straight years before increasing during 1995-98 to 25.8 percent.

Farm business debt is expected to decline 0.5-1 percent in calendar 1999, the first decrease in 7 years following increases during 8 of the previous 9 years. Nonreal and real estate loans are forecast to decrease about 0.4 percent and 1.0 percent, respectively, down from their respective gains of 3.4 and 2.6 percent in 1998. Commercial bank loans are projected to be steady compared with an anticipated 2.2-percent decline in FCS debt. The expected decline in total debt of about \$1.2 billion during 1999 will follow an expansion of \$31.3 billion or 22.5 percent since yearend 1992. Some \$14.3 billion (45.6 percent) of this increase came in 1997-98. But farm debt at yearend 1998 was still 12.2 percent (\$23.4 billion) below its 1984 peak.

The outlook for 1999 indicates that loan demand will continue to moderate because farmers do not know how long commodity prices and weak export demand will persist. Farmers learned during the farm financial crisis of the 1980's that ill-advised borrowing cannot substitute for adequate cash flow and profits. The forecast decline in farm business debt thus implies fewer new capital investments financed by debt and a relatively low incidence of farms borrowing their way out of cash-flow problems. Adequate working capital and the authorization of \$5.8 billion in additional government total assistance under last October's omnibus appropriation bill (P.L. 105-277) are helping to reduce loan balances and hold down new borrowing. About \$2.8 billion in additional government direct payments (mostly production flexibility payments) for 1998 and another \$2.8 billion in direct payments (mostly disaster payments) for 1999 will be distributed to farmers because of this legislation. The legislation also includes another \$200 million in minor farm program assistance. Projections are that total Federal payments received by farmers will be \$12.9 billion in 1998 and \$10.2 billion in 1999, based on current legislation.

Agricultural lenders have grown more cautious in extending agricultural credit. While the current situation does not merit the label of crisis, the farm loan portfolio losses of the early to mid-1980's are a recent memory. Many lenders have moved to improved measures of "repayment capacity" rather than cash flow alone to assess the ability of farmers to handle a given level of debt. ERS research shows that overall farmer use of net repayment capacity is forecast to rise to 57 percent in 1999, up from 55 percent in 1998 and 53 percent in 1997. Currently, the availability of funds is not an issue. In terms of the total supply of credit available to agriculture, lenders currently have more money available than they can profitably lend. What is clear is the current credit situation varies considerably by region, commodity, farm size, and farm type, and that lenders will be dealing with more internal variation in farm sector economic performance.

Federal regulators now insist that lenders follow stricter safety and soundness guidelines. Loan oversight has been enhanced following the farm financial crisis of the 1980's, with tighter regulation for all types of agricultural lenders. Examiners currently see few problems with underwriting practices for agricultural loans.

Today, despite low prices, lenders appear confident about the bulk of their farm customers. Most farmers are not heavily leveraged as they were a decade ago. Veteran lenders cite significant differences from the 1980's, including lower interest rates, more owner equity, better credit analysis and monitoring methods, and the financial health of their producers. Lenders will be able to work with most of their customers to restructure debt and provide credit for operating expenses.

Interest rates on farm loans are now the lowest since the end of 1994. Annual interest rates on farm loans declined 15 to

30 basis points from 1997 to 1998, with the largest declines occurring in the fourth quarter on large loans (greater than \$100,000). Recent reductions in farmer demand for credit, coupled with Federal Reserve cuts in the federal funds rate, have reduced interest rates. Agricultural loan rates and interest expenses are anticipated to continue a gently downward trend through 1999.

Agricultural banks remained very profitable through the middle of 1998. Their annualized mid-1998 rate of return on assets was 1.3 percent, in line with their strong performance in recent years. At 12.3 percent, return on equity remained below 1992's rate of 13.1 percent, but this is not a concern because it reflects high capital levels. Nonperforming loans declined a little to 1.1 percent of total loans, and loan loss provisions were only 0.3 percent of total loans. These results indicate that any problems in the farm sector had not yet adversely affected farm bank loan portfolios. Loan losses at agricultural banks will increase if farm sector problems persist over an extended period, but the strong capital position of farm banks will allow most of them to survive. Only one agricultural bank failed in 1998 and only four failed during 1994-98.

Average loan-to-deposit ratios for agricultural banks grew to 72.5 percent on September 30, 1998, up from 70.3 percent a year earlier and 57 percent 6 years earlier. The loan-to-deposit ratio has increased from a low of 53.5 percent in June 1987 and the previous high of 68.2 percent recorded in September 1968. In the current financial environment, commercial banks can easily access nondeposit sources of funds, and profitable, well-managed banks often have very high loan-to-deposit ratios.

The FCS entered 1999 in strong financial condition. Loan quality and earnings remain strong, and loan volume continues to grow faster than inflation. As of September 30, 1998, early signs existed of a modest, but uneven deterioration of credit quality. Volume growth continued to be led by short- and intermediate-term loans, traditionally dominated by commercial banks. Net income rose 8 percent for the first 9 months of 1998, reflecting increased net interest and noninterest income and a decrease in the provision for loan losses. Despite increased loan volume, earnings have remained sufficient to raise the overall ratio of at-risk capital to assets.

Life insurance companies historically have been providers of mortgage credit to the farm sector. Among life insurance companies, total farm lending activity was up 2.3 percent in 1998. Approximately \$2.54 billion in new farm mortgage loans was closed in 1998, compared with \$1.8 billion in 1997. During 1982-92 total industry farm mortgage holdings actually declined in 8 of the 11 years for an overall drop of 27.9 percent, so the 1992-98 increase of 13.2 percent is significant. Life insurance companies report adequate funds for the deals that meet their quality standards. Their farm lending is forecast to decline 4.8 percent in 1999.

FSA's presence in farm credit markets continued to shrink in 1998 as new lending activity sank 6 percent and loan repayment rates rose. Outstanding direct and guaranteed loan volume fell to \$15.7 billion at the end of fiscal 1998. Credit quality continued to improve in fiscal 1998, as loan delinquencies and loan write-offs declined.

Demand for FSA credit assistance is expected to rise in fiscal 1999 due to a weaker farm economy. Applications for FSA credit programs were up sharply at the end of 1998. Despite a significant boost in lending authority for operating loans authorized in the omnibus spending bill last fall, FSA anticipates operating loan authority will be exhausted earlier than in past years.

To assist indebted farm borrowers, the 1998 omnibus spending bill also made it easier to restructure debts, qualify for FSA assistance, and borrow from the guarantee program in larger amounts. In February 1999, FSA published regulations streamlining its guaranteed lending programs. This could boost program demand, especially for smaller loans. Finally, some administrative initiatives were announced to help borrowers struggling with burdensome debts. One initiative allows borrowers to defer payments to FSA.

Sales of mortgages through the Farmer Mac I and Farmer Mac II secondary market for farm mortgages and USDA guaranteed loans rose during 1998 and should continue to rise in 1999. Outstanding Farmer Mac I securitized volume totaled \$796 million and Farmer Mac II volume totaled \$337 million. Farmer Mac's profitability continues to be enhanced by its large investment portfolio.

## Lenders Benefit from Farm Sector's Overall Economic Performance

*Net cash farm income is estimated at \$59.1 billion in 1998, the second highest on record. But this reflects October 1998 legislation (P.L. 105-277), which added approximately \$5.8 billion of total assistance to the agricultural sector, including an additional \$5.6 in Federal direct payments for farmers. In 1999, net cash income may slip to \$55.5 billion.*

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The financial condition of agricultural lenders was stable to improved in 1998, and sound economic fundamentals are forecast for 1999. But each of the four major institutional farm lender categories--commercial banks, the Farm Credit System (FCS), the Farm Service Agency (FSA), and life insurance companies--faces some unique challenges within today's farm sector.

### **Lenders Served a Generally Profitable Farm Sector in 1998**

Generally favorable conditions experienced by the farm economy over the past several years have contributed to the strengthening financial condition of farm lenders. Net cash farm income, which measures sales during the year, was a record \$60.8 billion in 1997, and is expected to total \$59.1 billion in 1998. In 1999, farm lenders will be dealing with a farm sector whose economic performance is forecast to decline to \$55.5 billion, but remain at slightly above the 1990-98 average of \$55.1 billion. Net farm income, which assesses the net value of calendar-year production, including the portion placed in storage, is forecast to decline from \$49.8 billion in 1997 to \$48 billion in 1998, with a further drop of 7.1 percent to \$44.6 billion expected in 1999. The 1990-98 average net farm income was 44.5 billion.

Cash receipts from sales of farm commodities in 1998 totaled \$198 billion, down \$10.7 billion from 1997, with \$7.4 billion of the decline accounted for by crops and \$3.2 billion by livestock. But cash receipts from farm marketings averaged \$184.7 billion for 1990-98 and are forecast at \$198 billion in 1999. The value of farm production forecast for 1998 and 1999 was exceeded only in 1996 and 1997, when it was about \$10 billion higher because of the confluence of favorable harvests, prices, and exports. Crop sales averaged \$94.8 billion in 1990-98, compared with the 1999 forecast of \$102 billion. Livestock receipts averaged \$89.9 billion in 1990-98 and are forecast at \$96 billion in 1999.

Much of the viability of the farm economy rests in its sound balance sheet. The value of farm assets increased 55.2 percent from 1987 to 1998 and now totals \$1.13 trillion. Farm equity increased 68.1 percent during the same period and was \$954.3 billion at the end of 1998. Total farm assets should continue to increase in value, although at a slower rate than in recent years, and farm debt is expected to level off and may even decline slightly in 1999.

Although aggregate farm sector performance has been strong in recent years, 1998 was characterized by increasing variability in economic performance by region, commodity,

farm typology, and farm size. While production of many farm commodities remained high, collapsing prices have led to lower income for some producers. The affected commodities include corn, wheat, soybeans, and hogs. Adverse weather conditions also affected producers in the Northern Plains, Texas, Oklahoma, and in some areas of the Southeast (cotton producers). Some producers endured severe disease problems, such as the widespread wheat scab that added to farm problems in Minnesota and North Dakota. But numerous farm subsectors were profitable in 1998 and have a favorable outlook in 1999. These include dairy, beef cattle, broilers, vegetables, fruits, nursery, and greenhouse products.

Congress elected in 1998 to address the low farm commodity prices and weather problems affecting selected commodities with additional financial support. Under the existing 1996 Farm Act, the farm sector was scheduled to receive about \$5.6 billion in production flexibility payments (which replaced most commodity programs) in calendar 1998 and \$5.4 billion in calendar 1999. But the omnibus appropriations bill (P.L. 105-277), enacted in October included an additional \$5.8 billion in total assistance to the agricultural sector, including \$5.6 billion in direct payments for disaster and price relief, with 60 percent to be paid to farmers in 1998. These additional payments, along with stable production expenses and improved receipts for some commodities, will reduce the negative impact of low grain prices on 1999 farm income. An additional \$200 million will be distributed to the agricultural sector under minor programs.

The supplemental payments under P.L. 105-277 added to production flexibility payments and disaster relief funds together with previously authorized loan deficiency payments substantially boosted the Federal payments. Total Federal payments to farmers are projected at \$12.9 billion in 1998 and \$10.2 billion in 1999, barring any additional budgetary assistance. These are the highest payments in the 1990's except for 1993 and are most important in disaster areas and major grain producing regions. About \$2.8 billion in additional government direct payments (mostly production flexibility payments) for 1998 and another \$2.8 billion (mostly from disaster payments) for 1999 will be distributed to farmers because of this legislation. Nearly half of the fiscal 1998 production flexibility payments went to major grain-producing regions, such as the Corn Belt and the Northern Plains. In 1999, the disbursement of supplemental funds will be directed toward areas designated most in need of disaster relief and will not necessarily coincide with grain-producing areas as was the case in 1998.

The farm sector's aggregate financial indicators continue to show strength. Total farm business debt increased \$31.3 billion or 22.5 percent during 1992-98 while the inflation rate in the general economy was 12.7 percent. Total farm assets exceeded \$1.13 trillion in 1998 as farm equity increased for the twelfth straight year (or 71.1 percent during the span). The sector debt load relative to income and the debt-to-asset ratio are both steady. The total rate of return on assets has been in the 4.3-7 percent range since 1992.

Figure 1  
**Total farm business debt increasing, 1993-98**  
\$ billion

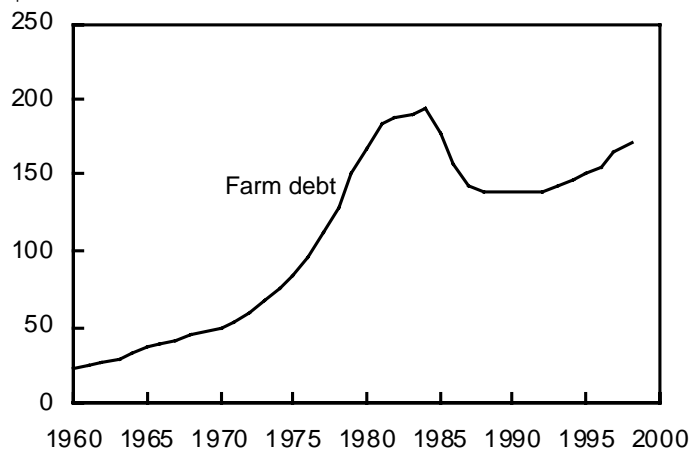


Figure 2  
**Annual change in farm debt positive since 1993**  
\$ billion

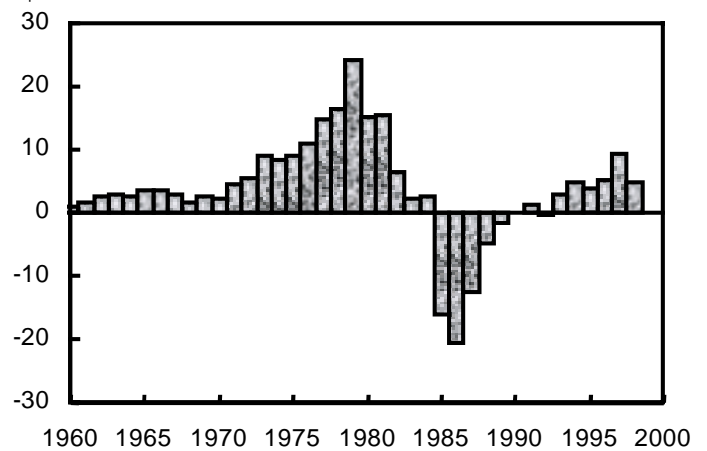


Figure 3  
**Farm sector balance sheet shows equity growth**  
\$ billion

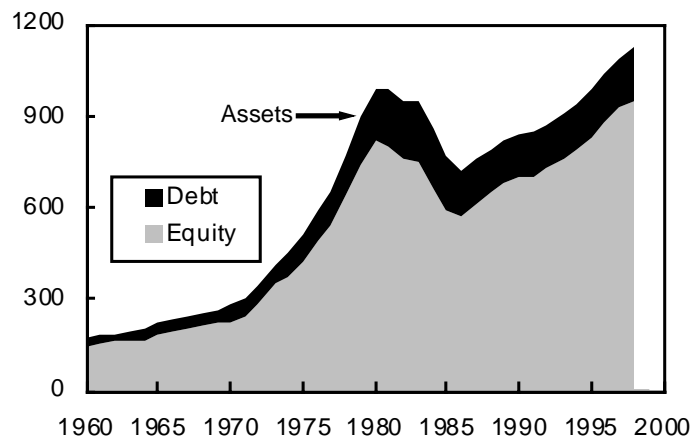


Figure 4  
**Farmers' debt load is about 3 times their net cash income**  
Ratio of debt to income

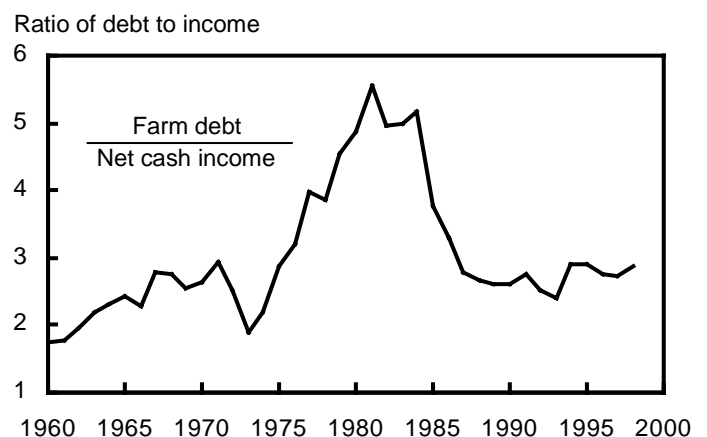


Figure 5  
**Real net farm and real net cash incomes decline in 1998**  
Billion 1992 dollars

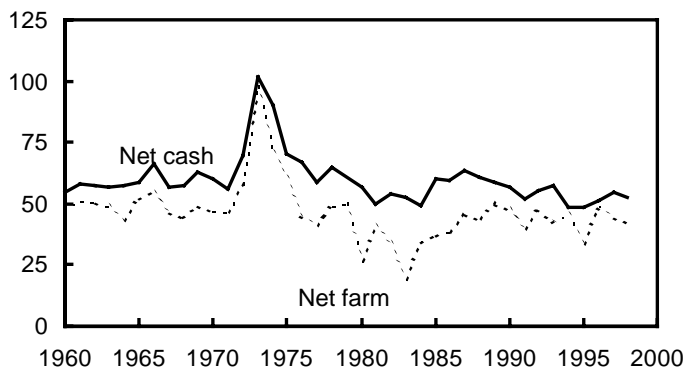
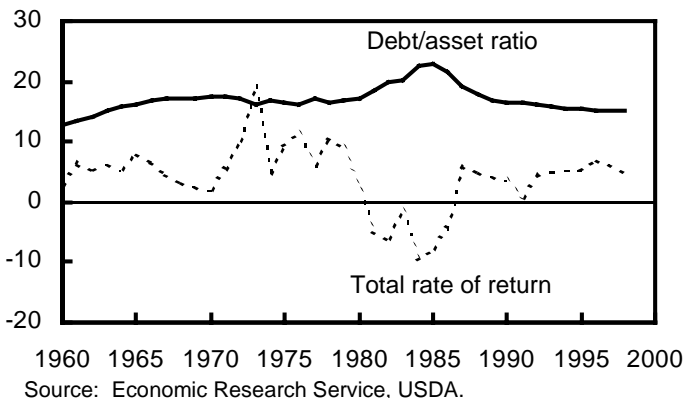


Figure 6  
**Farm sector rate of return remains normal and debt/asset ratio continues decline**  
Percent



Source: Economic Research Service, USDA.

## Lenders' Financial Performance Strong

*Farm lenders experienced another profitable year and entered 1999 in financially sound condition.*

The distribution of the farm sector's estimated \$170.4 billion in farm business debt among the six lender categories on December 31, 1998, is summarized in table 1. Commercial banks account for 41 percent of all farm debt outstanding, making them the leading agricultural lender, followed by the FCS with 25.8 percent. Individuals and others (merchant and dealer credit, land purchase credit contracts) held an estimated 22.5 percent with the remaining categories holding lesser market shares.

### **A Repeat of the 1980's?**

The large price declines affecting several major agricultural commodities in 1998 have raised concerns in some quarters that there may be a repeat of the 1982-86 farm financial crisis for farmers and farm lenders. However, there are major differences between the two periods. The economic climate of the 1970's signaled farmers to expand production and benefit from export opportunities and strong commodity prices, farm income, and farmland values. Generous and inexpensive credit from various sources helped finance the expansion. Lenders, consultants, and others often encouraged additional borrowing to finance expansion and total farm debt almost tripled during 1970-82. Even the farm portfolio of the former Farmers Home Administration (FmHA), the "lender of last resort," increased over six times while the public sector's share of farm debt jumped from 5.9 percent in 1970 to 15.4 percent in 1982.

Substantial numbers of financially extended farm producers were vulnerable to adverse shifts in market conditions. These conditions worsened in the early 1980's when export markets contracted while input prices and interest rates rose. The financial stress turned into a crisis when declines in farm commodity prices, income, and the value of farmland (the largest asset, used to secure much of the debt) made it difficult for some farmers to service their debts. These economic changes, not an overall lack of efficiency, produced the most severe financial stress for the farm sector since the Great Depression of the 1930's. The crisis was centered on the subset of farmers who had extensive debt.

The current situation differs by being one of widespread low prices rather than an overcommitment to borrowing by a large subset of farmers. For example, the ratio of farm debt to net cash farm income was only 2.88 in 1998, compared to the high of 5.56 in 1981. The increase in farm debt in recent years has been restrained compared with the 1970's, with only a 23.5-percent increase during 1990-98, compared with a 161.3-percent increase during 1970-78. FSA's direct farm loans outstanding as a share of total sector farm debt have dropped from a high of 16.3 percent in 1987 to 4.8 percent in 1998 as many financially vulnerable farmers retired or otherwise left the sector.

Farm lenders have undergone considerable restructuring and consolidation since 1980, and have thus spread their risk

over a more diversified and geographically dispersed borrower clientele. Farm lenders also learned the risks of lending on the basis of collateral in the 1980's and have instituted better loan analysis tools based on cash flow and other criteria. Farm lender regulation is much improved over the 1970's. In a nutshell, most financial problems faced by farm producers in 1998 were caused by a combination of low prices and poor weather conditions. Lenders likely will find that these farmers will not gain much relief in the form of higher commodity prices in 1999.

### **Lenders' Financial Position Continues Strong**

The position of agricultural lenders in 1998 reflected the generally healthy state of farmers' finances in recent years. All major institutional lender groups except FSA continued to experience historically low levels of delinquencies, foreclosures, net loan charge-offs, and loan restructuring (tables 2 and 3). Any farm financial stress must be sustained to make a significant impact on aggregate national farm lender indicators such as loan delinquency rates (that is, they are lagging indicators of financial stress). How long prices for several major farm commodities will remain near their 1998 lows is unknown, but there is no indication of a problem in the national farm lender performance data to date. Even if prices remain depressed long enough to cause loan defaults, there will be a lag before any significant farm financial stress would appear in the national lender data. The overall performance of farm lenders has generally improved since the farm financial crisis of the 1980's (app. table 6). In 1986, farm lenders held over \$3.7 billion in property due to loan defaults or foreclosures; in 1998 the amount was \$246 million.

The financial health of the FCS and commercial banks remains strong. FCS net income through the third quarter of 1998 was \$1.008 billion, compared with \$935 million a year earlier. FCS net interest margin (spread on total investable funds) for the first 9 months of 1998 was 2.90 percentage points. The spread has remained near or above 3 percent since the first quarter of 1993, helping to maintain profits. Net interest income was \$1.684 billion for the 9 months ending September 30, 1998, compared with \$1.629 billion a year earlier. Total FCS capital increased to \$12.4 billion on September 30, 1998, up from \$11.6 billion a year earlier. Nonaccrual loans as a percentage of total loans outstanding increased from 1.03 percent on September 30, 1997, to 1.26 percent a year later. Much of the increase was attributable to deterioration in the credit quality of a limited number of processing and marketing cooperatives--not farmers.

Agricultural banks reported high average returns on equity (ROE) and assets (ROA) for the 6 months ending June 30, 1998, and very low rates of net loan charge-offs. These results indicate that any problems in the farm sector had not adversely affected farm bank loan portfolios. In terms of loan quality, farm banks continued to perform about as well

as small nonagricultural banks. ROE is higher for small nonagricultural banks, but this partly reflects higher equity at agricultural banks. Agricultural bank loan loss provisions remained at 0.3 percent in the first half of 1998, reflecting an optimistic outlook regarding future loss rates. Only one agricultural bank failed in 1998 and only four failed during 1994-98.

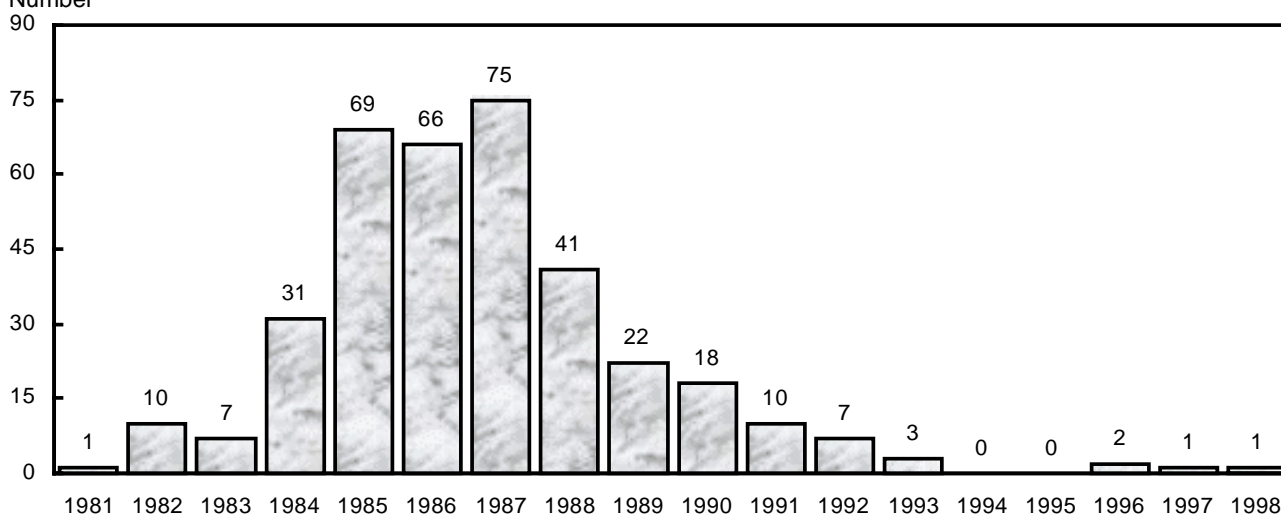
USDA's Farm Service Agency, the farm "lender of last resort," continues to work through delinquencies in its direct loan programs. The principal on delinquent loan volume fell to \$2.3 billion at the end of fiscal 1998, from \$2.6 billion the previous year. Despite the decline, nearly 25 percent of

direct loan program principal remains delinquent, with higher percentages still pervading the emergency loan programs. The improved financial condition of its borrowers going into 1998 and active loan restructuring explain much of the decline in delinquent volume. Loan write-downs, recovery write-offs, and debt settlement approvals were about the same as in fiscal 1997, totaling \$650 million. Net loan write-offs fell to \$674 million in fiscal 1998, from \$756 million a year earlier. During the 5 fiscal years 1987-91, net charge-offs of \$12.1 billion resulted from the FSA loan write-downs, write-offs, and debt settlements approved. Net charge-offs declined to \$5.3 billion during the past 5 fiscal years 1994-98 (table 3).

Figure 7

### Agricultural bank failures, 1981-98

Number

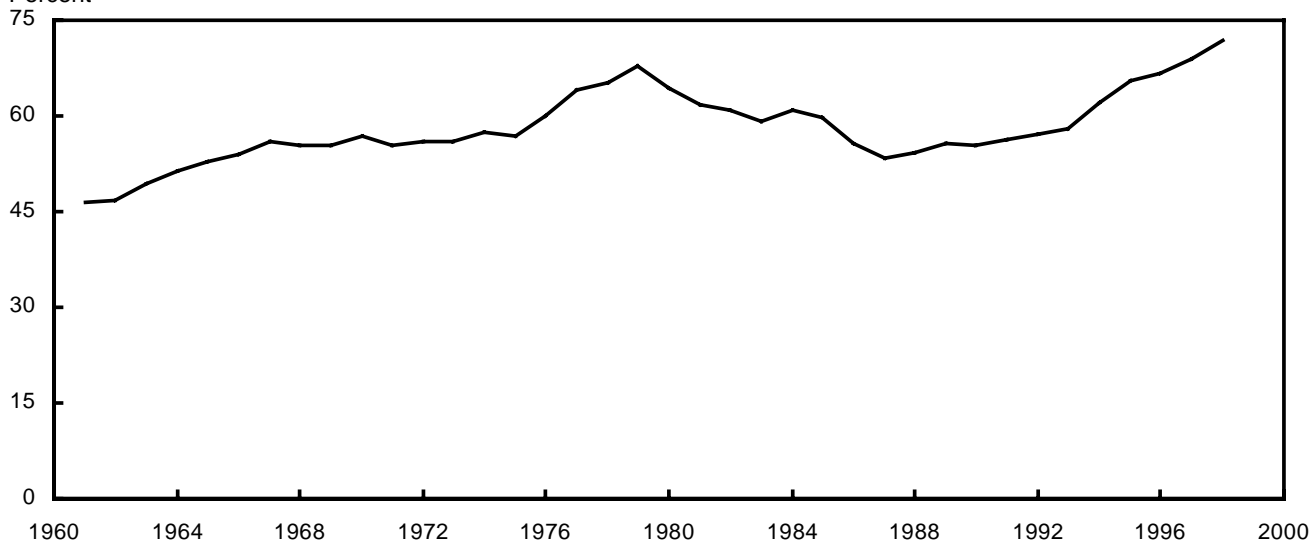


Source: Federal Deposit Insurance Corporation and Board of Governors of the Federal Reserve System.

Figure 8

### Agricultural bank loan-to-deposit ratios, 1961-98

Percent



Source: Board of Governors of the Federal Reserve System.



**Table 1—Distribution of farm business debt, by lender, December 31, 1998 1/**

| Lender                       | Type of debt               |                | Total |
|------------------------------|----------------------------|----------------|-------|
|                              | Real estate                | Nonreal estate |       |
|                              | <i>Percentage of total</i> |                |       |
| Commercial banks             | 15.7                       | 25.4           | 41.0  |
| Farm Credit System           | 16.5                       | 9.3            | 25.8  |
| Farm Service Agency          | 2.4                        | 2.4            | 4.8   |
| Life insurance companies     | 5.8                        | ---            | 5.8   |
| Individuals and others       | 11                         | 11.5           | 22.5  |
| Commodity Credit Corporation | 0.0                        | ---            | 2/    |
| Total                        | 51.4                       | 48.6           | 100.0 |

1/ Preliminary. Due to rounding some subcategories may not add to totals. 2/ This excludes CCC crop loans, which are estimated at \$1billion at the end of calendar 1998.

**Table 2—Delinquent farm loan volume, by lender, 1989-98**

| Lender                      | Yearend 1/                             |      |      |      |      |      |      |      |      | Mid-year<br>1998 2/ |
|-----------------------------|--|------|------|------|------|------|------|------|------|---------------------|
|                             | 1989                                   | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |                     |
|                             | <i>Billion dollars</i>                 |      |      |      |      |      |      |      |      |                     |
| Commercial banks 3/ 4/      | 0.7                                    | 0.6  | 0.7  | 0.6  | 0.5  | 0.4  | 0.4  | 0.5  | 0.5  | 0.6                 |
| Farm Credit System 5/       | 2.5                                    | 2.5  | 2.2  | 1.9  | 1.5  | 1.1  | 0.8  | 0.6  | 0.5  | 0.5                 |
| Life insurance companies 6/ | 0.4                                    | 0.4  | 0.4  | 0.3  | 0.2  | 0.2  | 0.2  | 0.1  | 0.1  | 0.1                 |
| Farm Service Agency 7/      | 11.1                                   | 8.1  | 7.3  | 6.6  | 5.8  | 4.4  | 4.5  | 3.5  | 2.6  | 2.3                 |
|                             | <i>Percentage of outstanding loans</i> |      |      |      |      |      |      |      |      |                     |
| Commercial banks 3/ 4/      | 2.3                                    | 1.9  | 1.9  | 1.8  | 1.4  | 1.1  | 1.1  | 1.3  | 1.1  | 1.3                 |
| Farm Credit System 5/       | 6.1                                    | 6.1  | 5.4  | 4.6  | 3.6  | 2.7  | 1.8  | 1.3  | 1.1  | 1.0                 |
| Life insurance companies 6/ | 4.7                                    | 4.2  | 3.8  | 3.3  | 2.2  | 2.6  | 2.7  | 0.9  | 1.0  | 1.8                 |
| Farm Service Agency 7/      | 47.8                                   | 41.3 | 41.7 | 42.5 | 41.0 | 34.8 | 39.0 | 32.6 | 26.8 | 24.9                |

1/ End of fiscal year (Sept. 30) for the Farm Service Agency (FSA) and end of the calendar year (Dec. 31) for the other lenders. 2/ June 30 except for FSA. 3/ Delinquencies were reported by institutions holding most of the farm loans in this lender group. Data shown are obtained by assuming that the remaining institutions in the group experienced the same delinquency rate. 4/ Farm nonreal estate loans past due 90 days or more or in nonaccrual status, from the Reports of Condition submitted by insured commercial banks. 5/ Data shown are nonaccrual loans, which include accrued interest receivable and exclude loans of the Banks for Cooperatives, Ag Credit Banks, and affiliated associations. 6/ Loans with interest in arrears more than 90 days. 7/ A loan is delinquent if a payment is more than 30 days past due. Data shown are for September 30; thus, they avoid the yearend seasonal peak in very short-term delinquencies and so are more comparable with those shown for other lenders. The FSA data reflect the total outstanding amount of the loans that are delinquent (as do the data shown for other lenders), rather than the smaller amount of delinquent payments that is often reported as FSA "delinquencies."

**Table 3—Farm loan losses (net charge-offs), by lender, 1986-98**

| Year   | Commercial banks 1/ |       | Farm Credit System 2/ |           | Farm Service Agency 3/ |        | Exhibit: Life insurance company foreclosures 4/ |       |
|--|---------------------|-------|-----------------------|-----------|------------------------|--------|---|-------|
| Million dollars (Percent of loans outstanding at end of period) 5/ |                     |       |                       |           |                        |        |   |       |
| 1986   | 1,195               | (3.4) | 1,321                 | (2.3)     | 434                    | (1.5)  | 827   | (7.9) |
| 1987   | 503                 | (1.6) | 488                   | (0.9)     | 1,199                  | (4.3)  | 692   | (7.5) |
| 1988   | 128                 | (0.5) | 413                   | (0.8)     | 2,113                  | (8.4)  | 364   | (4.0) |
| 1989   | 91                  | (0.3) | -5                    | (-0.0) 6/ | 3,297                  | (12.4) | 204   | (2.3) |
| 1990   | 51                  | (0.2) | 21                    | (0.0) 6/  | 3,199                  | (13.5) | 85  | (0.9) |
| 1991   | 105                 | (0.3) | 47                    | (0.1)     | 2,289                  | (10.4) | 95  | (1.0) |
| 1992   | 82                  | (0.2) | 19                    | (0.0) 6/  | 1,887                  | (9.1)  | 148   | (1.8) |
| 1993   | 54                  | (0.2) | -2                    | (-0.0) 6/ | 1,768                  | (9.4)  | 96  | (1.1) |
| 1994   | 69                  | (0.2) | -26                   | (-0.1)    | 1,353                  | (7.5)  | 42  | (0.5) |
| 1995   | 51                  | (0.1) | -5                    | (-0.0) 6/ | 1,041                  | (6.0)  | 73  | (0.8) |
| 1996   | 95                  | (0.2) | 48                    | (0.1)     | 1,344                  | (7.9)  | 82  | (0.8) |
| 1997   | 93                  | (0.2) | 27                    | (0.0) 6/  | 825                    | (5.0)  | 16  | (0.2) |
| 1998 7/  | 19                  | (0.1) | 13                    | (0.0) 6/  | 735                    | (4.7)  | 25  | (0.2) |

1/ Calendar year data for nonreal estate loans. 2/ Calendar year data. 3/ Fiscal year data beginning October 1. Includes data on the insured (direct) and guaranteed farm loan programs. FSA data are not directly comparable with commercial lenders because of some accounting differences. 4/ Loan charge-off data are not available for life insurance companies. 5/ Loan loss data rounded to nearest million dollars. 6/ Less than 0.05 percent. 7/ Commercial bank data through June 30, 1998, and Farm Credit System and life insurance company data through September 30, 1998.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, The Farm Credit Council, and the Farm Service Agency.

## Farmers' Use of Repayment Capacity Rises

*Farmers' use of credit lines expected to decrease marginally in 1999.*

### Debt Not Expected To Unduly Burden Farm Operators

Somewhat lower 1999 income will reduce farm operators' ability to meet debt service payments on their loans. Any potential interest rate declines in 1999 are not expected to be large enough to cause a large decrease in total farm sector interest payments despite a stable to declining level of total farm sector debt. Although some operators may experience difficulty in generating sufficient farm income to meet principal and interest payments, widespread financial stress is unlikely. U.S. farmland values increased 66.9 percent during 1987-98, and growing equity helped back farm borrowing. However, lower profitability beginning in 1998 led to slower rates of farmland value growth (including declines in some areas) that will continue into 1999, thus affecting credit demand.

Farmers are expected to lower their credit use slightly in 1999. Farm debt repayment capacity use (actual debt expressed as a percentage of maximum debt that could be repaid from current income) effectively measures the extent to which farmers are using their available lines of credit. This ratio indicates that, in 1999, farmers are expected to use more than 57 percent of the debt that could be supported by their current incomes. Use of debt repayment capacity rose from 45 percent in 1993 to 56 percent in 1995. Despite the 1996 rise in farm business debt, high net cash income and lower interest rates reduced repayment capacity use to 51 percent. In 1997, use of debt repayment capacity rose to 53 percent, and it was 55 percent in 1998. The 1999 level is expected to be the highest since 1986.

Lenders generally require that no more than 80 percent of a loan applicant's available income be used for repayment of

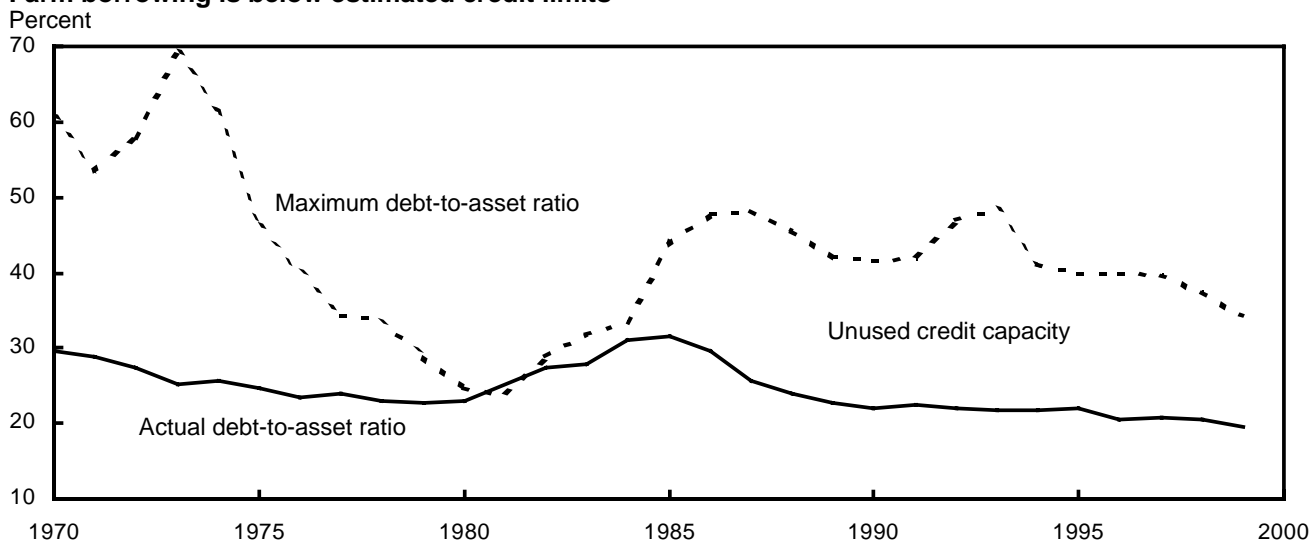
principal and interest on loans. For farm operators, this income available for debt service (measured as net cash income plus interest) determines the maximum loan payment the farmer could make. Given current market interest rates and an established repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers. Debt repayment capacity use is a measure of actual debt relative to this theoretical maximum feasible debt.

Despite the rise in use of available credit capacity, the traditional debt-to-asset ratio indicates that farmers' financial position is not expected to deteriorate in 1999. The aggregate farm operator debt-to-asset ratio is projected at .196 at the end of 1999, as farm asset values are anticipated to rise more rapidly than debt. The ratio appears to suggest a continuing improvement in farm financial conditions.

However, substitution of maximum debt into the debt-to-asset ratio computation indicates that any improvement due to rising asset values may be potentially offset by lower cash incomes. The maximum debt-to-asset ratio that could be supported from current cash income fell from .40 in 1997 to .37 in 1998. In 1999, it is expected to decline further to .35--the lowest since 1984. The difference between actual and maximum debt-to-asset ratios suggests that farmers, in total, have the capability to safely manage existing debt. However, lower income available to service debt, coupled with lenders' emphasis on loan approval based on repayment ability rather than collateral values, will probably restrain any increase in farmers' borrowing activities.

Figure 9

### Farm borrowing is below estimated credit limits



Values for 1998 and 1999 are forecasts.

Source: Economic Research Service, USDA.

## Farm Loan Rates Trend Downward in 1998

*Agricultural loan rates underwent slight declines in 1998 and further declines are anticipated for 1999.*

### **Agricultural Loan Rate Decline a Positive Development in 1998**

Interest rate activity in the agricultural loan market in 1998 can be bisected into the first quarter and the rest of the year. The first quarter reflected economic and financial conditions similar to the previous few years. The rest of the year saw weather problems in some regions of the country as well as significant declines in the price of certain agricultural commodities. The amount of new *nonreal estate farm loans* made by commercial banks in the fourth quarter of 1998 was the lowest fourth quarter figure recorded by the Federal Reserve since 1989. Reduced credit demand by farmers generally leads to lower agricultural loan rates.

Movements in interest rates on farm loans reflect changes in lenders' willingness and ability to extend credit as well as changes in farmers' desire to borrow. To lenders, returns on nonfarm investments reflect the opportunity cost of lending to farmers. Hence, interest rates on farm loans follow movements in the returns on nonfarm uses of loanable funds, such as Treasury yields and interest rates on consumer and nonfarm business loans. Returns to investing in Treasuries have been declining as the Federal Reserve has sought to lower interest rates throughout the general economy in order to support economic growth. This has resulted in a lower cost of lending to farmers, providing farmers the opportunity to obtain lower rates on their loans.

Annual interest rates on new *nonreal estate farm loans* made in 1998 by commercial bankers declined 20 basis points from the 1997 average. Rates on similar loans made by FCS lenders dropped more than 40 basis points. By the fourth quarter of 1998, interest rates on new *nonreal estate farm loans* made by commercial banks were the lowest for the year, 70 basis points below fourth-quarter 1997. This was the second lowest quarterly average for this series since the first quarter of 1995. For FCS lenders, rates on similar loans for the same period were almost 50 basis points lower.

Average interest rates on new *nonreal estate farm loans* declined for all major loan purposes and sizes. Declines were largest for loans from large banks and for loans of more than \$100,000. Lower interest rates lower the cost per dollar borrowed, reducing both the cost of new loans and interest payments on outstanding variable rate debt.

The proportion of *nonreal estate farm loans* made with variable-rate terms have continued to decline during the 1990's, especially for loans greater than \$100,000, loans made by large banks, and for loans made for financing livestock and "other" types of farm enterprises (where "other" is defined as any purpose other than livestock, current operating expenses, and farm machinery and equipment). Variable-rate loans convert lenders' interest rate risk into farmers' default risk. The declining use of

variable-rate loans by commercial banks since 1993 suggests reduced fears of interest rate risk or that banks are substituting other means of interest rate risk management. Bankers are less likely to encourage farmers to take on the added default risk that accompanies variable-rate loans at a time when some farm output prices are declining.

Interest rates on *real estate farm loans* declined throughout 1998. Average annual rates declined about 20 basis points for banks and about 45 basis points for FCS lenders. The fourth-quarter average bank rate for 1998 is expected to be about 20 points lower than the fourth-quarter average for 1997. A 75-basis-point decline in fourth quarter-averages occurred on similar loans made by FCS lenders.

*Farm real estate loan* rates are declining to their lowest levels since the beginning of 1995. While lower loan rates mean lower interest expenses, these small declines may not be viewed as economically significant by farmers and their lenders, especially when contrasted with large declines in some agricultural product prices and some reports of small declines in farmland values.

Nevertheless, lower loan rates and reduced farmer borrowing means reduced farm interest expenses, especially for nonreal estate interest payments. This will at least partially offset the decline in farmer revenues due to lower agricultural product prices and lower interest payments on farmer savings.

### **Fixed Rate Premium Collapses**

One measure of the impact of the current agricultural economic situation on farm loan costs is how the fixed-rate premium (equal to the fixed interest rate minus the variable interest rate for the same loan) has changed since the fourth quarter of 1997. Listed below are the quarterly fixed-rate premiums (in basis points) on agricultural loans made by commercial banks in the Ninth Federal Reserve District (which includes Minnesota, Montana, the Dakotas, and parts of Michigan and Wisconsin):

| Year:<br>Quarter | Loan types       |           |           |                |
|------------------|------------------|-----------|-----------|----------------|
|                  | Feeder<br>Cattle | Operating | Machinery | Real<br>Estate |
| 1997:4           | 10               | 10        | 40        | 100            |
| 1998:1           | 50               | 40        | 40        | 10             |
| 1998:2           | 0                | 0         | 10        | 0              |
| 1998:3           | -10              | 0         | 10        | -10            |
| 1998:4           | 0                | 0         | 0         | 0              |

The fixed-rate premium, what farmers pay lenders to avoid assuming the risk of rising interest rates, decreases when lenders believe loan rates will decline in the future. The fixed-rate premium converged to zero starting in the second quarter of 1998, becoming slightly negative in the third

quarter for feeder cattle and real estate loans. The fixed-rate premium reflects changes in the U.S. Treasury yield curve for similar maturities. Fixed-rate loans mean predictable interest rate payments, reducing the farmer's interest rate risk exposure.

### Further Declines Anticipated in 1999

Credit is available, but modest declines in farm debt demand and lower loan rates portend a decline in interest expenses for the farm sector from their 1998 levels. The largest percentage decrease in interest payments will probably occur on *nonreal estate farm debt*. Off-farm income, more favorable credit terms on the part of input suppliers and Federal Government assistance payments should partially replace borrowing normally done through financial service intermediaries.

Economic theory suggests that investment in real assets (such as farm machinery and equipment and farmland) is

inversely related to the real (inflation-adjusted) rate of interest, other things being equal. However, studies by the USDA show that changes in real interest rates have little effect on farmer investment in real assets. Rather, the ratio of machinery prices to the prices of the commodities produced by that machinery has a greater influence on farmer demand, and real returns to farmland have larger effects on farmland value. The current decline in interest rates will probably not increase credit demand for farm machinery and equipment or farmland values, given expectations of continued low prices for certain agricultural commodities and resistance on the part of machinery and equipment dealers to reduce prices in order to encourage sales.

The zero fixed-rate premium for the fourth quarter of 1998 suggests lenders anticipate stable loan rates during 1999. While the best bet for any change in 1999 is that loan rates trend downward, any such decline will most likely equal the magnitude of the decline experienced in 1998.

Figure 10

### Selected interest rates, selected years

Percent

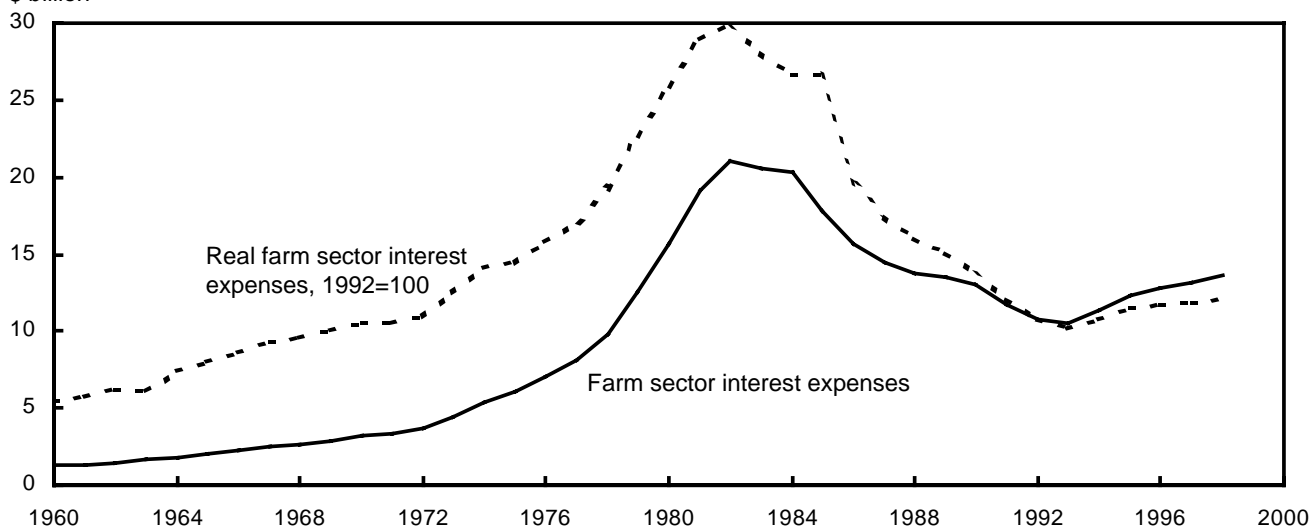


Source: Board of Governors of the Federal Reserve System and various Farm Credit District Banks.

Figure 11

**Farm sector interest expenses, 1960-98**

\$ billion

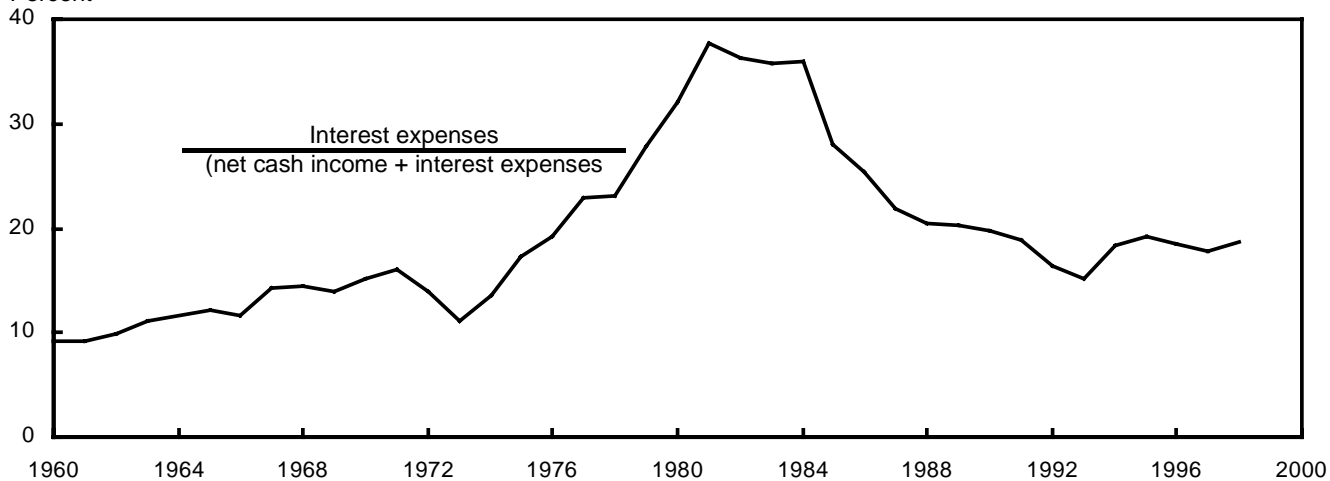


Source: Economic Research Service, USDA.

Figure 12

**Interest expenses as a share of net cash income, 1960-98**

Percent

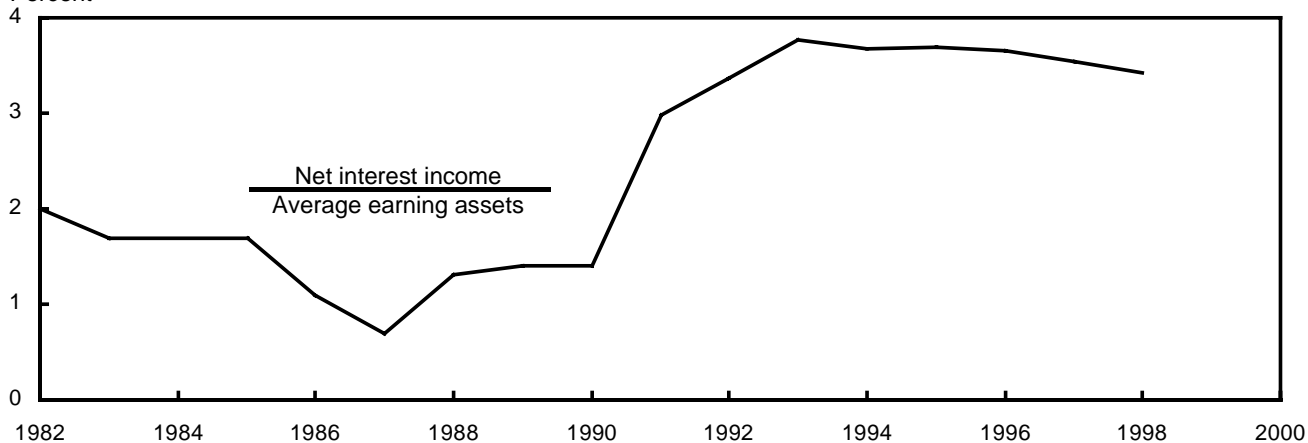


Source: Economic Research Service, USDA.

Figure 13

**Interest margins for Farm Credit Banks, 1982-98\***

Percent



\* Net interest income as a percentage of average earning assets. Average earning assets consist of gross loans plus cash and investments. Data represent combined totals for Farm Credit Banks and Associations, excluding those Associations affiliated with CoBank, ACB. Data for 1998 are through September 30.

Source: "Summary Report of Condition: Performance of the Farm Credit System," Various Dates, Federal Farm Credit Banks Funding Corporation, Jersey City, NJ.

## Agricultural Banks Remain Highly Profitable

*Problems in the farm sector are not reflected in aggregate data for farm banks.*

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Agricultural banks remained very profitable through the middle of 1998. Low loan loss provisions and good interest rate spreads supported large profits for agricultural lenders. An annualized mid-1998 rate of return on assets (ROA) of 1.3 percent exceeded the strong 1997 average (table 6). Return on equity (ROE) increased to 12.3 percent.

Continued strength in ROA reflects substantial quality in farm bank loan portfolios. Loans in nonperforming status at midyear were only 1.1 percent of total loans (table 4), slightly above the average of 0.9 percent for small nonagricultural banks (table 4). As measured by ROA and loan quality, agricultural banks also matched the performance of the small nonagricultural banks to which they are often compared.

As farmers continued to slowly assume more debt, loan-to-deposit ratios at agricultural banks rose from 69.0 to 71.7 percent over the past year. Because this is an average, higher loan ratios at some small banks may lead their managers to consider slowing lending activity. However, several surveys conducted by Federal Reserve District Banks suggest that most agricultural bankers have the capacity and willingness to extend additional farm credit. These surveys demonstrate that bankers are very aware of the effects of low commodity prices on their farmer customers. For example, bankers noted that loan repayment rates were dropping. But the bankers felt that this was due, in part, to farmers holding on to their crops in the hope of higher prices, rather than an inability to repay their loans.

### **What Is an Agricultural Bank?**

The Board of Governors of the Federal Reserve System (FRB) classifies a bank as agricultural if its ratio of farm loans to total loans exceeds the unweighted average of the ratio at all banks on a given date--16.81 percent on June 30, 1998 (table 5). The Federal Deposit Insurance Corporation (FDIC) criterion is a constant 25-percent ratio of agricultural loans to total loans. Unless otherwise indicated, the FRB agricultural bank definition is used throughout this report. Most farm banks retain much larger agricultural shares in their loan portfolios and therefore remain sensitive to conditions in the agricultural sector of the economy. Farm loans averaged 36 percent of total loans at all farm banks in 1998, and reached 49 percent for farm banks with below \$25 million in assets (table 7).

The dollar amount of farm loans outstanding typically peaks in the summer and declines the rest of the year as production loans are paid down. Thus the use of June data rather than end-of-year data in the last column of table 5 distorts recent trends in the number of agricultural banks. For the 6 months ending June 30, 1998, farm banks declined by only 33 to 3,065 using the FRB definition and increased by 18 to 2,392

using the FDIC definition. Both definitions show declines when comparing June 1998 to June 1997 (not shown in the table); 138 fewer FRB farm banks and a drop of 72 in FDIC's count of agricultural banks. The trend toward fewer agricultural banks reflects an industry-wide drop in the number of commercial banks over the last decade due to mergers and failures.

### **Farm Loan Quality Continues To Improve**

Farm loan quality continued to look solid through the first half of 1998. Only 1.3 percent of all commercial bank agricultural production loans were delinquent (table 2). This was down from 1.4 percent as of June 1997.

Net charge-offs of farm production loans totaled \$19 million (table 3) at all commercial banks in the first 6 months of 1998, down from \$25 million in the first half of 1997 (not shown). Recent charge-offs are negligible relative to outstanding loans and charge-offs observed during the farm crisis of the mid-1980's. Loan loss provisions remained at 0.3 percent of outstanding loans for agricultural banks, reflecting management's continued positive outlook for future loss rates (table 6).

### **Profitability Surpasses 1997 Results**

Agricultural bank profits grew in 1998, with gains in both ROA and ROE. ROE for small nonagricultural banks exceeded the midyear ROE for agricultural banks, but their ROA was the same. Agricultural banks maintained higher average capital-to-asset ratios during 1998. Their larger capital ratios help explain why, on average, they had the same ROA but a smaller ROE compared with small nonagricultural banks.

Agricultural banks' loan-to-deposit ratios increased to 71.7 percent, compared with 72.2 percent at small nonagricultural banks. The ratio of loans to assets, 60.7 percent at agricultural banks and 61.0 percent at small nonagricultural banks, reveals the relative liquidity of these two groups. Both are highly liquid and eager to make additional loans, but expect loan demand to remain stable.

One agricultural bank failed in 1998 (appendix table 8), the same number as in 1997. This reflects continued improvement in measurements of farm bank loan quality and wide net interest margins, but also follows national trends of a very strong performance in the banking industry. Two nonagricultural banks failed in 1998, compared with none in 1997. Only three agricultural banks and four nonfarm banks had nonperforming loans exceeding their capital at midyear, the same as at the end of 1997 (appendix table 8).

Strong profits and loan quality, and low expectations for future loss rates, allowed commercial banks to keep loan loss provisions low.

**Table 4—Nonperforming loans as a percentage of total loans, by type of bank, 1990-98 1/**

| Type of bank             | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|--------------------------|------|------|------|------|------|------|------|------|------|
| <i>Percent</i>           |      |      |      |      |      |      |      |      |      |
| Agricultural             |      |      |      |      |      |      |      |      |      |
| Total nonperforming 2/   | 2.0  | 1.9  | 1.8  | 1.4  | 1.1  | 1.1  | 1.3  | 1.2  | 1.1  |
| Past due 90 days 3/      | 0.6  | 0.6  | 0.6  | 0.4  | 0.4  | 0.4  | 0.5  | 0.5  | 0.5  |
| Nonaccrual               | 1.3  | 1.3  | 1.2  | 1.0  | 0.7  | 0.7  | 0.8  | 0.7  | 0.7  |
| Small nonagricultural 4/ |      |      |      |      |      |      |      |      |      |
| Total nonperforming 2/   | 2.0  | 2.3  | 2.0  | 1.7  | 1.3  | 1.1  | 1.0  | 0.9  | 0.9  |
| Past due 90 days 3/      | 0.6  | 0.7  | 0.5  | 0.4  | 0.3  | 0.3  | 0.3  | 0.3  | 0.3  |
| Nonaccrual               | 1.4  | 1.6  | 1.5  | 1.3  | 1.0  | 0.8  | 0.7  | 0.6  | 0.6  |

1/ Data are weighted by bank asset size using month-end June balances. 2/ Columns may not equal totals due to rounding. 3/ Still accruing interest. 4/ Banks with less than \$500 million in assets that were not agricultural by the Federal Reserve Board definition.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Table 5—Number of agricultural banks, by definition, 1990-98 1/**

| Item                             | 1990   | 1991   | 1992   | 1993   | 1994   | 1995  | 1996  | 1997  | 1998 2/ |
|----------------------------------|--------|--------|--------|--------|--------|-------|-------|-------|---------|
| Commercial banks (Number)        | 12,270 | 11,849 | 11,400 | 10,917 | 10,400 | 9,825 | 9,413 | 9,020 | 8,857   |
| FRB Agricultural banks (Number)  | 4,067  | 3,952  | 3,851  | 3,723  | 3,548  | 3,351 | 3,240 | 3,098 | 3,065   |
| FRB farm loan ratio (Percent)    | 15.94  | 16.57  | 16.73  | 17.04  | 17.00  | 16.83 | 16.46 | 16.44 | 16.81   |
| FDIC Agricultural banks (Number) | 3,090  | 3,116  | 3,019  | 2,947  | 2,826  | 2,642 | 2,480 | 2,374 | 2,392   |

1/ Includes domestically chartered, FDIC-insured commercial banks with deposits, assets, and loans. 2/ 1998 figures are for June 30; all others are December 31.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System (FRB).

**Table 6—Selected bank performance measures, by type of bank, 1990-98 1/**

| Performance measure                                 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 2/ |
|---|------|------|------|------|------|------|------|------|---------|
| <i>Percent</i>                                      |      |      |      |      |      |      |      |      |         |
| Rate of return on equity capital                    |      |      |      |      |      |      |      |      |         |
| Agricultural banks                                  | 10.7 | 11.4 | 13.1 | 12.8 | 12.1 | 11.9 | 11.8 | 12.1 | 12.3    |
| Nonag small banks                                   | 8.5  | 9.1  | 12.0 | 12.9 | 12.8 | 13.0 | 12.9 | 13.0 | 13.0    |
| Rate of return on assets                            |      |      |      |      |      |      |      |      |         |
| Agricultural banks                                  | 1.0  | 1.0  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.2  | 1.3     |
| Nonag small banks                                   | 0.7  | 0.7  | 1.0  | 1.1  | 1.1  | 1.2  | 1.2  | 1.2  | 1.3     |
| Provisions for loan losses as a percentage of loans |      |      |      |      |      |      |      |      |         |
| Agricultural banks                                  | 0.5  | 0.5  | 0.4  | 0.3  | 0.2  | 0.3  | 0.3  | 0.3  | 0.3     |
| Nonag small banks                                   | 1.0  | 1.0  | 0.8  | 0.5  | 0.4  | 0.3  | 0.4  | 0.4  | 0.4     |
| Capital as a percentage of assets                   |      |      |      |      |      |      |      |      |         |
| Agricultural banks                                  | 9.9  | 10.1 | 10.4 | 10.9 | 10.8 | 11.3 | 11.1 | 11.4 | 11.4    |
| Nonag small banks                                   | 9.0  | 9.2  | 9.6  | 10.1 | 10.1 | 10.6 | 10.7 | 10.8 | 11.0    |

1/ Rate of return on equity is net income after taxes as a percentage of the average of total equity capital at the beginning and end of the year. Rate of return on total assets is net income after taxes as a percentage of total assets on December 31. 2/ 1998 ratios are June 30 data, annualized.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

## **Small Agricultural Banks Are the Biggest Farm Lenders**

*Nonagricultural banks held a slightly smaller share of commercial bank farm loans.*

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Both agricultural and nonagricultural banks reported healthy gains in the total value of their farm lending portfolios during June 1997-June 1998. Agricultural banks reported a \$3.2-billion increase. The \$2.5-billion gain for nonagricultural banks left them with 45.7 percent of commercial bank farm loans (table 7), down from 45.9 percent the previous year.

The largest size class of nonagricultural banks holds 30 percent of all commercial bank farm debt (table 7). With less than 16 percent of this debt, the other nonagricultural bank classes trail the combined 18-percent market share of the two smallest classes of agricultural banks.

### ***Solvency Measures Look Good for All Bank Groups***

Bank capital reduces the risk of bank failure by cushioning losses and supports liquidity by maintaining borrower confidence. Capital-to-asset ratios for midyear 1998 show that commercial banks--regardless of size--have sufficient capital to handle any loan losses (table 8). Small commercial banks had capital-to-asset ratios ranging from 11.2 to 14.2 percent, compared with 10.8 to 11.0 percent for the three largest bank categories. A narrower measure, the ratio of equity capital to assets, averaged 13.3 percent for the smallest banks, but only 7.8 percent for banks with assets above \$500 million. Large banks tend to be highly leveraged, with more loans outstanding per dollar of equity capital.

Lower loan-to-deposit ratios suggest that small commercial banks are more liquid than larger banks. However, nondeposit funding sources and secondary markets for loan sales have weakened the loan-to-deposit ratio's traditional role as a liquidity measure. Some banks hold more loans, resulting in higher loan-to-deposit ratios. Other banks reduce risk and their loan-to-deposit ratios by selling loans and acquiring securities instead. Large banks use nondeposit sources of loanable funds liberally, as witnessed by their much lower value of deposits as a percentage of liabilities (table 8). This ratio was about 71 percent for the largest banks, but above 90 percent for all other size categories.

### ***Largest Banks Most Profitable***

Large banks lend a greater percentage of their asset base, but they typically earn lower rates of return on those assets (ROA) than do smaller banks. However, in the first part of 1998 the smallest banks registered the lowest ROA and the highest came from banks with \$300-\$500 million in assets. Large banks improved their profitability in part due to continued reductions in real estate loan problems. As of

June 30, 1998, 1.0 percent of big bank real estate loans were nonperforming (appendix table 7), down from 1.1 percent a year earlier. Rate of return on equity (ROE) increased uniformly with bank size (table 9), helped by greater leverage in the larger banks.

The smallest banks, those with \$25 million or less in assets, include 862 agricultural banks and 458 nonagricultural banks (table 7). The smallest agricultural banks accounted for 5 percent of loans to agriculture held in the portfolios of commercial banks. Agricultural banks achieved an average annualized ROA of 1.28 percent and ROE of 12.32 percent. Agricultural banks with less than \$25 million in assets earned an ROA of 1.16 percent, compared with only 0.35 percent for nonagricultural banks of that size class.

### ***Current Banking Issues***

Interstate banking and branching legislation that became law in 1994 permitted interstate branching through bank mergers beginning in June 1997. Only Montana and Texas passed legislation opting out of interstate branching, and even then an exception allowed at least one large bank holding company to convert its Texas bank affiliates to interstate branches. While interstate banking has increased the pace of bank consolidation, agricultural banks are typically too small to attract attention from the mostly large banks that actively participate in interstate banking. Much of the consolidation in rural areas involves bank offices that already belonged to large banking firms. New data are just now becoming available to help evaluate whether large banks lend to farmers and small businesses in rural areas that are served by offices of those banks.

In 1998 Congress came the closest yet to revising the Glass-Steagall Act, which limits bank activity in the insurance and securities industries. Prospects for a comprehensive legislative solution were complicated by conflicts between the banking, insurance, and securities industries, between regulators, and between small and large banks. There were also conflicts between members of Congress with different views concerning issues such as the Community Reinvestment Act and whether to allow banks and industrial corporations to also join together. Many small banks fear that removing all Glass-Steagall barriers would concentrate economic power in a few giant, noncompetitive firms. Federal Reserve officials believe that possible threats to the future viability of Federal deposit insurance funds would be lessened if banks wishing to enter insurance and securities industries were required to do so through affiliates of a holding company. The Department of Treasury disagrees, arguing that the same degree of safety could be achieved if banks provide these services through subsidiaries of the banks.



Small agricultural banks still hold the majority of farm loans, despite the declining number of agricultural banks.

**Table 7—Agricultural lending of agricultural and nonagricultural banks, by bank size, June 30, 1998 1/**

| Total assets           | Agricultural banks |                              |                          |                     |                       | Nonagricultural banks |                              |                          |                     |                       |
|------------------------|--------------------|------------------------------|--------------------------|---------------------|-----------------------|-----------------------|------------------------------|--------------------------|---------------------|-----------------------|
|                        | Banks              | Total ag loans               | Avg. ag loans            | Ag lending share 2/ | Ag loans/ total loans | Banks                 | Total ag loans               | Avg. ag loans            | Ag lending share 2/ | Ag loans/ total loans |
| <i>Million dollars</i> | <i>Number</i>      | <i>---Million dollars---</i> | <i>-----Percent-----</i> |                     |                       | <i>Number</i>         | <i>---Million dollars---</i> | <i>-----Percent-----</i> |                     |                       |
| Under 25               | 862                | 4,034                        | 4.7                      | 5.4                 | 48.8                  | 458                   | 216                          | 0.5                      | 0.3                 | 5.2                   |
| 25-50                  | 999                | 9,315                        | 9.3                      | 12.4                | 43.1                  | 1,014                 | 1,009                        | 1.0                      | 1.3                 | 4.5                   |
| 50-100                 | 757                | 11,999                       | 15.9                     | 16.0                | 37.9                  | 1,475                 | 2,653                        | 1.8                      | 3.5                 | 4.1                   |
| 100-300                | 402                | 11,892                       | 29.6                     | 15.8                | 32.2                  | 1,838                 | 5,668                        | 3.1                      | 7.5                 | 3.0                   |
| 300-500                | 27                 | 1,819                        | 67.4                     | 2.4                 | 30.9                  | 367                   | 2,051                        | 5.6                      | 2.7                 | 2.4                   |
| Over 500               | 18                 | 1,805                        | 100.3                    | 2.4                 | 22.0                  | 640                   | 22,751                       | 35.5                     | 30.2                | 0.9                   |
| Total                  | 3,065              | 40,863                       | 13.3                     | 54.3                | 36.3                  | 5,792                 | 34,348                       | 5.9                      | 45.7                | 1.2                   |

1/ Figures are weighted within size class. 2/ This represents the percentage of total commercial bank agricultural loans held by this size group of banks.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Table 8—Selected commercial bank solvency and liquidity ratios, by bank size, June 30, 1998 1/**

| Total assets           | Banks         | Capital/ asset 2/        | Equity/ asset | Loan/ deposit | Loan/ asset | Deposit/ liability |
|------------------------|---------------|--------------------------|---------------|---------------|-------------|--------------------|
| <i>Million dollars</i> | <i>Number</i> | <i>-----Percent-----</i> |               |               |             |                    |
| Under 25               | 1,320         | 14.2                     | 13.3          | 66.4          | 56.1        | 97.5               |
| 25-50                  | 2,013         | 12.1                     | 11.2          | 68.3          | 58.8        | 97.0               |
| 50-100                 | 2,232         | 11.2                     | 10.3          | 70.4          | 60.5        | 95.8               |
| 100-300                | 2,240         | 10.8                     | 9.7           | 72.5          | 61.5        | 94.1               |
| 300-500                | 394           | 10.8                     | 9.4           | 75.0          | 61.4        | 90.7               |
| Over 500               | 658           | 11.0                     | 7.8           | 91.7          | 59.4        | 70.7               |
| Total                  | 8,857         | 11.0                     | 8.1           | 88.0          | 59.6        | 74.2               |

1/ Weighted average within size class. 2/ Total capital includes equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Table 9—Selected commercial bank profitability and efficiency measures, by bank size, June 30, 1998 1/**

| Total assets           | Return on assets 2/ | Return on equity 3/ | Asset utilization 4/ | Noninterest income to total income | Interest expense to total expense | Interest expense to interest income |
|------------------------|---------------------|---------------------|----------------------|------------------------------------|-----------------------------------|-------------------------------------|
| <i>Million dollars</i> | <i>Percent</i>      |                     |                      |                                    |                                   |                                     |
| Under 25               | 0.88                | 6.59                | 8.89                 | 17.99                              | 42.60                             | 43.69                               |
| 25-50                  | 1.09                | 9.75                | 8.32                 | 10.69                              | 50.38                             | 45.08                               |
| 50-100                 | 1.28                | 12.37               | 8.45                 | 10.92                              | 52.40                             | 45.18                               |
| 100-300                | 1.30                | 13.11               | 8.68                 | 12.96                              | 50.83                             | 44.26                               |
| 300-500                | 1.39                | 14.17               | 9.28                 | 19.79                              | 47.97                             | 45.05                               |
| Over 500               | 1.22                | 14.68               | 9.21                 | 26.76                              | 49.06                             | 50.86                               |
| Total                  | 1.23                | 14.29               | 9.13                 | 24.90                              | 49.23                             | 49.83                               |

1/ All ratios are on an annualized basis and weighted within class size. 2/ Rate of return on assets is net income after taxes as a percentage of total assets. 3/ Rate of return on equity is net income after taxes as a percentage of total equity. 4/ Asset utilization is gross income as a percentage of total assets.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

## Farm Credit System Loan Volume and Profits Rise Despite Some Weaknesses in Loan Quality

*The Farm Credit System remained financially strong in 1998. Modest loan quality problems were concentrated among loans to cooperatives.*

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The financial condition of the Farm Credit System (FCS) remains solid as it enters 1999. Loan volume, income, and at-risk capital all continue to grow. Loan portfolio quality is still strong, but less so than at yearend 1997. Volume growth has supported the System's level of earnings, while net interest margins have declined slightly. Despite increased loan volume, earnings for the first 9 months of 1998 remained sufficient to raise the ratio of at-risk capital to assets.

For the fourth straight year, FCS loan volume grew faster than the rate of inflation (table 10). Overall FCS loan volume grew 4.2 percent during the first 9 months of 1998, with long-term real estate loans growing 4.4 percent, short- and intermediate-term loans growing 9.1 percent, and loans to cooperatives or for their benefit (largely loans connected with international transactions) declining 1.3 percent. Domestic loans to cooperatives decreased slightly (2.1 percent) and their components changed. Decreased financing to cooperative agribusinesses was partially offset by increased loans to rural electric and telecommunications utilities.

Overall, there were early signs of a modest, but uneven deterioration in credit quality. These signs include an increase in nonaccrual loans, a decrease in the percent of nonaccrual loans that are current on interest and principal payments, an increase in loans 90 days or more past due, and an increase in loans 30 days or more past due. Nonaccrual loan volume increased primarily because of problems at a limited number of processing and marketing cooperatives. Nonaccrual loans current as to principal and interest as a percentage of total nonaccrual loans declined to 48.4 percent on September 30, 1998, from 62.5 percent on December 31, 1997. Accruing loans 90 days or more past due--loans considered well secured and in the process of collection--increased \$30 million in the first 9 months of 1998. Usually, such loans peak at the end of the first-quarter due to the seasonal payment pattern of long-term farm real estate loans, but in 1998 the third-quarter balance roughly equaled the first-quarter balance. The percentage of accrual loans that were delinquent (accruing loans 30 days or more past due) also increased from September 30, 1997, to September 30, 1998.

It should be emphasized that despite this deterioration, none of these statistics are at particularly worrisome levels for the FCS as a whole. Perhaps more noteworthy is the strikingly strong level of credit quality achieved by yearend 1997.

Additionally, over the last few years most FCS borrowers have strengthened their financial positions, improving their ability to withstand this year's adverse commodity prices (especially for corn, wheat, soybeans, and livestock). As always, weather or disease conditions in specific parts of the country have significantly hurt some borrowers.

FCS income has surpassed \$1 billion each year since 1993 and had reached that level in just the first 9 months of 1998, increasing 8 percent over the year-earlier period (table 11). Income rose primarily from increased net interest and noninterest income and a decrease in the provision for loan losses. The increases were partially offset by increases in salaries and employee benefits (related to hiring and training related to strategic initiatives, customer research and development efforts, and severance costs associated with reorganizations in two districts). Decreases in other operating expenses explain the 8-percent increase in net income for the first 9 months of 1998 over the year-earlier period.

Net interest income increased mostly due to higher loan volume. Net interest rate spreads (the difference between the interest earned on earning assets and the interest paid on interest-bearing sources of funds) declined slightly to 1.97 percentage points in the first 9 months of 1998 from 2.03 points a year earlier. Spreads declined primarily because yields fell on cash and investments, as did interest income associated with nonaccrual loans.

The increase in noninterest income was due primarily to a gain of \$23 million realized from the sale of certain available-for-sale investments held to retire callable Financial Assistance Corporation (FAC) bonds. The FCS banks entered into an agreement, effective July 31, 1998, with the FAC to call \$240 million in FAC bonds on November 23, 1998. Two other bond issues (one for \$157 million and one for \$89 million) will be called in the next 2 years if interest rates remain sufficiently below the rates paid on these bonds.

Capital adequacy remains strong among FCS institutions. By September 30, 1998, FCS at-risk capital, including loss allowances and the FCS insurance fund, stood at \$14.2 billion or 21.5 percent of loans outstanding (table 12). Combined surplus capital and loss allowances are now 60 percent above the 1985 peak of \$6.9 billion (not counting the \$1.4-billion balance of the FCS Insurance Fund) despite a 5-percent decline in loan volume.

**Table 10—Farm Credit System loan volume, by loan type, December 31, 1992-97, and September 30, 1998**

| Loan type                                   | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  |
|---|-------|-------|-------|-------|-------|-------|-------|
| <i>Billion dollars</i>                      |       |       |       |       |       |       |       |
| Long-term real estate                       | 28.66 | 28.46 | 28.40 | 28.43 | 29.60 | 30.66 | 32.01 |
| Short and intermediate term                 | 11.11 | 11.59 | 12.39 | 13.80 | 15.11 | 16.64 | 18.16 |
| Loans to or for the benefit of cooperatives | 12.63 | 13.86 | 13.89 | 16.36 | 16.47 | 16.14 | 15.94 |
| Total                                       | 52.40 | 53.91 | 54.68 | 58.59 | 61.18 | 63.44 | 66.11 |

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

**Table 11—Farm Credit System income statement, December 31, 1992-97, and September 30, 1998**

| Item                               | 1992     | 1993    | 1994     | 1995     | 1996  | 1997  | 1998 1/ |
|------------------------------------|----------|---------|----------|----------|-------|-------|---------|
| <i>Billion dollars</i>             |          |         |          |          |       |       |         |
| Total interest income              | 4.72     | 4.35    | 4.68     | 5.59     | 5.78  | 5.94  | 6.12    |
| Interest expense                   | -2.93    | -2.39   | -2.72    | -3.57    | -3.62 | -3.75 | -3.87   |
| Net interest income                | 1.79     | 1.96    | 1.96     | 2.02     | 2.16  | 2.19  | 2.25    |
| Provision/reversal for loan losses | -0.02    | -0.04   | -0.05    | -0.04    | -0.14 | -0.09 | -0.08   |
| Loss/gain on other property        | 0.01     | 0.00    | 0.00     | 0.00     | 0.01  | 0.01  | 0.00    |
| Other income                       | 0.22     | 0.21    | 0.14     | 0.17     | 0.20  | 0.24  | 0.29    |
| Other expense                      | -0.82 2/ | -0.84   | -0.92 3/ | -0.84 4/ | -0.86 | -0.90 | -0.93   |
| Debt repurchase                    | -0.04    | -0.02   | 0.00     | -0.01    | 0.00  | 0.00  | 0.00    |
| Taxes                              | -0.15    | -0.15   | -0.13    | -0.14    | -0.17 | -0.19 | -0.19   |
| Net income                         | 0.99     | 1.11 5/ | 1.01     | 1.17     | 1.20  | 1.27  | 1.34    |

1/ Annualized rate based on first three quarters' performance. 2/ Includes \$.028 billion in one-time merger implementation costs associated with the Agribank merger. 3/ Includes \$.072 billion in one-time merger implementation and restructuring costs. 4/ Includes \$.006 billion in one-time merger implementation and restructuring costs. 5/ Does not include one-time net income of \$104 million from changes in accounting for income taxes and nonpension post retirement benefits.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

**Table 12—Farm Credit System financial indicators, December 31, 1992-97, and September 30, 1998**

| Item   | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998    |
|--|-------|-------|-------|-------|-------|-------|---------|
| <i>Percent</i>   |       |       |       |       |       |       |         |
| At-risk capital/total loans 1/                                 | 15.91 | 17.87 | 19.06 | 19.42 | 20.22 | 21.15 | 21.55   |
| Percent of loans in nonaccrual status or over 90 days past due | 3.84  | 2.76  | 1.95  | 1.42  | 1.10  | 0.99  | 1.36    |
| Other expense/total loans 2/                                   | 1.51  | 1.56  | 1.55  | 1.41  | 1.40  | 1.41  | 1.40 /3 |

1/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock and participation certificates, and the FCS Insurance Fund. 2/ Excludes one-time merger implementation and restructuring costs. 3/ Annualized rate based on first three quarters' performance.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement and Farm Credit System Quarterly Information Statement, various dates.

## Strong Overall Farm Credit System Performance Masks Weaker Loan Quality at Some Institutions

*Some institutions see substantial rises in nonaccrual loans. The Farm Credit Administration's new philosophy on intra-system competition is likely to spur significant change in FCS structure.*

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FCS systemwide statistics hide differences in performance among FCS districts and entities. For example, aggregate nonaccrual loans increased 26 percent for the year ending September 30, 1998, marking the first deterioration in overall loan quality since 1991 and ending 6 years of impressive improvements. However, the level of nonaccrual loans decreased by more than 15 percent in the AgAmerica, AgFirst, Texas, and Western districts, and improved relative to total loans outstanding at all banks and districts except for the St. Paul Bank for Cooperatives (BC), CoBank, ACB, and the Wichita district. The brunt of the deterioration in loan quality is being borne by the FCS banks with large lending exposure to agricultural cooperatives, the St. Paul BC and CoBank, ACB. Both these banks registered a triple-digit percentage increase in nonaccrual loans during the year ending September 30, 1998. Deterioration in loan quality is a major factor in the planned merger of the St. Paul BC (where nonaccrual loans are now 6 percent of total loans) into CoBank, ACB.

Systemwide, at-risk capital continues to accumulate faster than loans outstanding. At-risk capital measures all resources that can be liquidated without impairing bondholders. Such resources include unprotected borrower stock and allowances for losses on loans as well as surplus. The ratio of at-risk capital to total assets is a measure of the cushion between stockholders and bankruptcy. This ratio exceeded 17 percent for each district not engaged in lending to cooperatives. Both CoBank and the St. Paul BC maintained lower capital-to-asset ratios of 10.7 and 16.9 percent, respectively. While the AgAmerica, AgFirst, AgriBank, and Western districts allowed their ratios of at-risk capital to assets to decrease slightly over the year, the St. Paul BC substantially increased its ratio for the third consecutive year.

Systemwide net income before taxes and extraordinary items rose 9.8 percent from a year earlier for the 9 months ending September 30, 1998, but the increase was unevenly distributed across FCS banks and districts. Net income fell in two districts (AgAmerica and Western) but rose in all others and at the St. Paul BC. The substantial rises in net income at CoBank (17 percent) and the St. Paul BC (109 percent) were caused by large loan loss provisions in the previous year (figure 14).

For the second year, AgriBank (total loan volume of \$17.8 billion) replaced CoBank as the highest volume FCS district, and will likely remain the largest even after CoBank merges with the St. Paul BC (table 13). AgAmerica experienced substantial growth, gaining 11 percent, compared with aggregate loan volume growth of 5 percent. The St. Paul BC was the only district or bank where loan volume fell substantially (down 9.5 percent) following a fall of 9 percent the previous year.

### ***Farm Credit Administration to Encourage Intra-System Competition***

In July 1998, the board of directors of the Farm Credit Administration--an independent agency of the Federal government that regulates the Farm Credit System--adopted a philosophy statement on intra-system competition that could lead to substantial changes in FCS structure and operations. The statement affirms the board's belief that unrestricted competition among FCS lenders will benefit eligible borrowers. The FCA board supports (1) the flexibility for associations to choose their source(s) of funding, (2) initiatives brought to the FCA by the FCS that allow institutions to become more efficient and relevant in the market place, (3) removal of geographical boundaries of FCS entities, (4) movement toward institutional structures that would encompass short-term lending, long-term lending, and BC-type lending, and (5) interpretations of the statutes that will enable FCS institutions to become more competitive.

In November, the FCA published a proposed rule with respect to chartered territories of FCS lenders as a step in implementing the new policy. The proposed rule would allow eligible borrowers to obtain credit and financial services from FCS lenders of their choice regardless of the location of their residence or agricultural activity--effectively eliminating territorial restrictions on FCS lenders. However, a FCS lender would still be obligated to serve all eligible, creditworthy borrowers in its designated territory. Any FCS lender conducting substantial business beyond its designated territory would be required to adopt a board policy and a business plan addressing extraterritorial activities. The comment period on the proposed rule has been extended to May 10, 1999.

Increases in nonaccrual loans are concentrated in the Wichita and CoBank districts and at the St. Paul BC. Loan quality continued to improve dramatically in many other districts. Net incomes rise in most districts while total at-risk capital increases in all districts.

**Table 13—Farm Credit System district-level financial statistics**

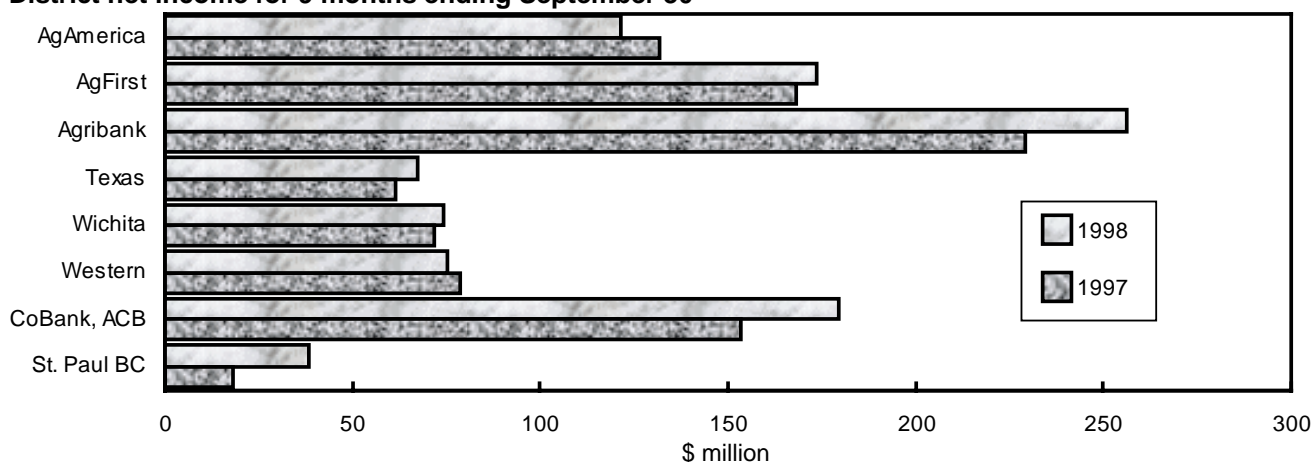
|  | Total<br>loans | Nonaccrual<br>loans | Nonaccrual<br>loans'<br>share | Net income<br>before<br>taxes and<br>extraordinary<br>items | Total<br>at-risk<br>capital 1/ | At-risk<br>capital/<br>assets |
|--|----------------|---------------------|-------------------------------|---|--------------------------------|-------------------------------|
|  | \$1,000        | \$1,000             | Percent                       | \$1,000   | \$1,000                        | Percent                       |
| -----Nine months ending September 30, 1998-----                    |                |                     |                               |   |                                |                               |
| AgAmerica  | 7,912,610      | 90,682              | 1.15                          | 121,625   | 1,789,463                      | 20.10                         |
| AgFirst  | 10,073,589     | 79,085              | 0.79                          | 173,534   | 2,266,419                      | 19.04                         |
| Agribank   | 17,810,029     | 195,893             | 1.10                          | 256,297   | 3,675,284                      | 17.19                         |
| Texas  | 4,333,239      | 39,299              | 0.91                          | 67,455  | 1,096,890                      | 23.18                         |
| Wichita  | 4,502,498      | 57,459              | 1.28                          | 74,203  | 1,224,085                      | 22.80                         |
| Western  | 5,624,694      | 35,505              | 0.63                          | 75,292  | 1,202,970                      | 18.23                         |
| CoBank, ACB  | 15,206,425     | 220,476             | 1.45                          | 179,723   | 2,009,281                      | 10.73                         |
| St. Paul BC  | 1,865,929      | 112,604             | 6.03                          | 38,117  | 380,122                        | 16.91                         |
| All Districts  | 67,329,013     | 831,003             | 1.23                          | 973,316   | 13,578,635                     | 17.02                         |
| -----Nine months ending September 30, 1997-----                    |                |                     |                               |   |                                |                               |
| AgAmerica  | 7,120,042      | 113,858             | 1.60                          | 131,688   | 1,675,541                      | 21.69                         |
| AgFirst  | 9,652,864      | 94,920              | 0.98                          | 168,234   | 2,152,373                      | 19.46                         |
| Agribank   | 16,220,793     | 185,734             | 1.15                          | 229,331   | 3,417,663                      | 17.53                         |
| Texas  | 4,100,875      | 55,102              | 1.34                          | 61,699  | 1,038,014                      | 22.75                         |
| Wichita  | 4,416,419      | 48,748              | 1.10                          | 71,585  | 1,149,934                      | 22.29                         |
| Western  | 5,238,944      | 53,198              | 1.02                          | 78,737  | 1,148,388                      | 18.69                         |
| CoBank, ACB  | 15,400,915     | 64,354              | 0.42                          | 153,218   | 1,914,370                      | 10.20                         |
| St. Paul BC  | 2,061,380      | 30,062              | 1.46                          | 18,242  | 353,712                        | 14.51                         |
| All Districts  | 64,212,232     | 645,976             | 1.01                          | 886,680   | 12,790,782                     | 16.99                         |
| -----Percent change, September 30, 1997 to September 30, 1998----- |                |                     |                               |   |                                |                               |
| AgAmerica  | 11.13          | -20.36              | -28.33                        | -7.64   | 6.80                           | -7.33                         |
| AgFirst  | 4.36           | -16.68              | -20.16                        | 3.15  | 5.30                           | -2.13                         |
| Agribank   | 9.80           | 5.47                | -3.94                         | 11.76   | 7.54                           | -1.93                         |
| Texas  | 5.67           | -28.68              | -32.50                        | 9.33  | 5.67                           | 1.91                          |
| Wichita  | 1.95           | 17.87               | 15.62                         | 3.66  | 6.45                           | 2.29                          |
| Western  | 7.36           | -33.26              | -37.84                        | -4.38   | 4.75                           | -2.45                         |
| CoBank, ACB  | -1.26          | 242.60              | 246.98                        | 17.30   | 4.96                           | 5.21                          |
| St. Paul BC  | -9.48          | 274.57              | 313.81                        | 108.95  | 7.47                           | 16.52                         |
| All Districts  | 4.85           | 28.64               | 22.69                         | 9.77  | 6.16                           | 0.18                          |

1/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock.

Source: Federal Farm Credit Banks Funding Corporation, Summary Report of Condition and Performance of the Farm Credit System, various dates.

Figure 14

**District net income for 9 months ending September 30**



Source: Federal Farm Credit Banks Funding Corporation, Summary Report of Condition and Performance of the Farm Credit System, various dates.

## **Life Insurance Company Farm Loan Portfolios Remain Strong**

*Life insurance companies closed new farm mortgage loans totaling approximately \$2.54 billion in 1998, compared with \$1.8 billion in 1997. Loan activity is expected to decline in 1999.*

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Historically, agricultural real estate mortgages have been an important investment for life insurance companies, which have been a key source of farm real estate loan funds. On June 30, 1998, approximately 20 life insurance companies held 15,800 agricultural loans. During 1998, the quality of agricultural mortgage portfolios of life insurance companies remained high.

### ***Delinquencies at Low Level***

The agricultural loan delinquency rate based on dollar volume was 1.8 percent on June 30, 1998, up from 0.94 a year earlier. The June 30, 1998, nonagricultural rate was 0.82 percent (table 14). Agricultural mortgage delinquency rates continued at a low level in 1998 despite the uptick. They were 2.92 percent as recently as June 1996 (the peak was 19.9 percent in June 1986) and the 1.8 percent of June 1998 is below all post-1982 rates except for the very low rates experienced in 1996-97. Since 1991 the agricultural delinquency rate has generally been lower than the nonagricultural rate both in number of loans and dollar volume. Some \$190.1 million in life insurance company agricultural mortgage debt was delinquent on June 30, 1998, a modest level for the industry.

### ***Foreclosure Rates at a Very Low Level***

The share of agricultural mortgage loans based on dollar volume in the process of foreclosure stood at 0.20 percent on June 30, 1998, and has been below the nonagricultural rate since 1991 (table 15). This is the lowest agricultural level since 1979. A total of \$21.7 million in life insurance company farm mortgage loans was in the process of foreclosure on June 30, 1998, down from \$162.3 million 5 years earlier. Agricultural mortgage loans in the process of foreclosure totaled 40 on June 30, 1998, down from 1,073 on December 31, 1988, and 184 on December 31, 1993.

The number and dollar amounts of agricultural and nonagricultural loans actually foreclosed declined throughout the 1987-97 period (table 16). They are now running at levels comparable to 1981 and earlier. Agricultural mortgage loan foreclosures were only \$15.9 million in 1997, and \$24.9 million through September 30, 1998.

### ***Important Trends Affect Lending***

The life insurance industry's relationship with agriculture has changed rapidly in recent years. In spite of the changes, life insurance companies have been resilient lenders to the farm sector, occupying an important market segment. They held 11.2 percent of the farm mortgage debt (including operator households) at yearend 1998, compared with 12 percent when the USDA data series began in 1910, and a

high of 25.1 percent in 1955-56. Life insurance company outstanding farm loan portfolios have trended up since the end of 1992, gaining 13.2 percent by yearend 1998.

Approximately 20 companies now hold farm mortgages. The number of life insurance companies making new farm mortgage loans declined from 12 in 1980 to 6 in late 1996, with most departures occurring in 1986. In June 1997, as part of a larger transaction, the stock of Equitable Agri-Business was sold to Lend Lease, an Australian company. The name of the agricultural unit was changed to Lend Lease Agri-Business, Inc. Lend Lease is a publicly traded global company with interests primarily in insurance, financial services, and real estate. Lend Lease Agri-Business continues to operate as it has done in the past with Equitable being the primary client.

The six companies (AEGON USA, Lend Lease Agri-Business, Metropolitan Life, Mutual of New York, Prudential, and Travelers) currently active in farm lending account for about 85 percent of the industry's farm mortgages and generally have high total assets and large farm mortgage portfolios. They have virtually pulled out of the small- to medium-sized farm mortgage market in favor of loans to agribusiness, timber, and specialty enterprises. These companies are emphasizing larger (\$500,000 or more) agricultural loans with an industry average of \$684,000 on September 30, 1998. The nominal average farm loan size increased almost fourfold between 1980 and 1998. Since 1980 the concentration of life insurance company farm mortgage holdings has shifted away from the Corn Belt to the Southeast and Pacific Coast farm production regions.

The life insurance industry's relationship with agriculture has grown more complicated in recent years with the direct acquisition of farmland in addition to expanding farm loan portfolios. Total loans held by life insurance companies (excluding households) at yearend 1998 are estimated at \$9.9 billion. The industry also now holds an estimated \$3.2 billion in direct farmland investments, up over twelvefold since 1979. The nominal average farm loan increased almost five times in size during 1980-98.

### ***New Loans Likely To Decline in 1999***

There will be opportunities in 1999 for life insurance companies to make profitable farm mortgage loans, but the competition for the better-quality loans will continue to be keen, particularly from the FCS. Active companies continue to have sufficient loanable funds for qualified applicants and are aggressively competing on rate, terms, and loan-to-value ratio. Total life insurance company farm loans outstanding are projected to decline 4.8 percent in 1999, the first decrease after 6 years of growth.

**Table 14—Life insurance company mortgage loan delinquencies, 1991-98 1/**

| End of month |      | Rates by number of loans  |                        | Rates by amount           |                        |
|--------------|------|---------------------------|------------------------|---------------------------|------------------------|
|              |      | Nonagricultural mortgages | Agricultural mortgages | Nonagricultural mortgages | Agricultural mortgages |
|              |      | <i>Percent</i>            |                        |                           |                        |
| 1991         | June | 2.30                      | 3.55                   | 5.25                      | 6.35                   |
|              | Dec. | 2.66                      | 2.34                   | 5.79                      | 3.84                   |
| 1992         | June | 2.87                      | 4.07                   | 7.35                      | 5.48                   |
|              | Dec. | 3.05                      | 2.64                   | 6.50                      | 3.33                   |
| 1993         | June | 2.78                      | 3.47                   | 6.23                      | 4.06                   |
|              | Dec. | 2.84                      | 1.99                   | 4.48                      | 2.21                   |
| 1994         | June | 2.94                      | 2.51                   | 5.00                      | 3.77                   |
|              | Dec. | 2.81                      | 1.27                   | 3.34                      | 2.60                   |
| 1995         | June | 2.67                      | 1.67                   | 3.53                      | 2.85                   |
|              | Dec. | 2.51                      | 1.14                   | 3.43                      | 2.72                   |
| 1996         | June | 2.48                      | 1.57                   | 2.58                      | 2.92                   |
|              | Dec. | 2.50                      | 0.83                   | 1.81                      | 0.92                   |
| 1997         | June | 2.66                      | 0.96                   | 1.57                      | 0.94                   |
|              | Dec. | 2.13                      | 0.69                   | 0.92                      | 0.97                   |
| 1998         | June | 2.01                      | 1.19                   | 0.82                      | 1.80                   |

1/ Delinquent loans (including loans in the process of foreclosure). A delinquent loan is a nonfarm mortgage with interest payments in arrears at least 2 months (60 days if other than a monthly pay) or a farm loan with interest in arrears more than 90 days.

**Table 15—Life insurance company mortgage loans in the process of foreclosure, 1991-98 1/**

| End of month |      | Rates by number of loans  |                        | Rates by amount           |                        |
|--------------|------|---------------------------|------------------------|---------------------------|------------------------|
|              |      | Nonagricultural mortgages | Agricultural mortgages | Nonagricultural mortgages | Agricultural mortgages |
|              |      | <i>Percent</i>            |                        |                           |                        |
| 1991         | June | 0.58                      | 1.26                   | 2.39                      | 2.45                   |
|              | Dec. | 0.68                      | 1.29                   | 2.78                      | 2.24                   |
| 1992         | June | 0.77                      | 1.74                   | 3.40                      | 3.11                   |
|              | Dec. | 0.76                      | 1.57                   | 3.08                      | 2.32                   |
| 1993         | June | 0.84                      | 1.52                   | 2.89                      | 1.93                   |
|              | Dec. | 0.80                      | 1.04                   | 2.14                      | 1.30                   |
| 1994         | June | 0.82                      | 0.97                   | 2.46                      | 1.04                   |
|              | Dec. | 0.82                      | 0.68                   | 1.77                      | 1.11                   |
| 1995         | June | 0.80                      | 0.62                   | 2.05                      | 1.02                   |
|              | Dec. | 0.68                      | 0.32                   | 1.42                      | 1.17                   |
| 1996         | June | 0.70                      | 0.42                   | 1.52                      | 1.26                   |
|              | Dec. | 0.66                      | 0.30                   | 1.09                      | 0.32                   |
| 1997         | June | 0.61                      | 0.26                   | 0.90                      | 0.33                   |
|              | Dec. | 0.54                      | 0.19                   | 0.58                      | 0.18                   |
| 1998         | June | 0.53                      | 0.25                   | 0.46                      | 0.20                   |

1/ Reporting companies account for approximately 85 percent of the mortgages held by U.S. life insurance companies depending on the date of the survey. Loans in foreclosure include those on which foreclosure action has been authorized, including any involved in a subsequent filing of bankruptcy. Beginning in 1988, loans in the foreclosure category include loans in redemption period.

**Table 16—Life insurance company mortgage loans foreclosed, 1985-98 1/**

| Year    | Nonagricultural mortgages |                  | Agricultural mortgages |                  |
|---------|---------------------------|------------------|------------------------|------------------|
|         | Number                    | Thousand dollars | Number                 | Thousand dollars |
| 1985    | 1,033                     | 328,558          | 1,000                  | 530,235          |
| 1986    | 1,541                     | 1,143,082        | 1,654                  | 827,472          |
| 1987    | 2,048                     | 1,580,027        | 1,515                  | 691,914          |
| 1988    | 1,196                     | 2,530,105        | 727                    | 364,414          |
| 1989    | 1,098                     | 2,178,949        | 356                    | 204,361          |
| 1990    | 1,018                     | 3,042,171        | 122                    | 85,281           |
| 1991    | 1,284                     | 4,942,349        | 125                    | 94,875           |
| 1992    | 1,365                     | 6,665,288        | 88                     | 148,006          |
| 1993    | 1,159                     | 6,013,084        | 79                     | 96,318           |
| 1994    | 844                       | 4,463,787        | 31                     | 41,745           |
| 1995    | 640                       | 3,055,039        | 21                     | 73,258           |
| 1996    | 400                       | 1,661,973        | 23                     | 81,538           |
| 1997    | 285                       | 1,373,452        | 14                     | 15,949           |
| 1998 2/ | 123                       | 541,440          | 11                     | 24,879           |

1/ Loans foreclosed include those for which title to the property or entitling certificate was acquired during the period shown, either through foreclosure or voluntary conveyance in lieu of foreclosure. Dollar amounts include principal outstanding at the time of the foreclosure, amounts capitalized for interest, foreclosure costs, and any advances made to protect the collateral. 2/ January 1 through June 30.

Source: American Council of Life Insurance, Investment Bulletin: Mortgage Loan Portfolio Profile, various issues.

## **Farm Service Agency Loan Quality Improves in Fiscal 1998**

*Funding for operating loans was increased in fiscal 1999 to meet growing demand.*

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FSA's borrowers showed little evidence of greater debt repayment problems at the end of fiscal 1998. The volume of delinquent loan payments in the direct loan portfolio fell for the tenth consecutive year, while guaranteed loan delinquencies edged up only slightly (table 17). Guaranteed loan program delinquencies have been inching up for the past few years as loans in this portfolio mature and new lending activity has stagnated (table 18). Loan payments for many FSA borrowers come due at the first of each calendar year and early indications suggest that repayment problems will rise in 1999.

FSA's presence in farm credit markets continued to shrink in 1998. Outstanding direct and guaranteed loan volume fell to \$15.6 billion at fiscal yearend, or 9 percent of total U.S. farm debt (table 19). A drop in new loan volume, debt settlements, loan write-offs, and normal repayment activity contributed to the decline. Net loan write-offs (principal and delinquent accrued interest payments) fell \$82 million to \$674 million on direct loans and \$8 million to \$61 million on guaranteed loans.

### **Greater Funding for Operating Loan Programs**

Demand for FSA credit programs is increasing in fiscal 1999 due to a weaker farm economy. The pace of applications for FSA assistance and loan obligation volume in the first quarter of fiscal 1999 was up over the same quarter in fiscal 1998. FSA anticipates loan authority will be exhausted earlier than is normal for many programs and in late February \$1.1 billion in supplemental lending authority was requested. Historically, only the unsubsidized Guaranteed Operating Loan (OL) program has significant unused lending authority at fiscal yearend.

Total FSA program authority for fiscal 1999 is \$2.7 billion, which is \$500 million greater than the fiscal 1998 obligation volume (table 20). All of the increase is due to greater OL funding, as direct and guaranteed farm ownership (FO) loan program funding remained unchanged for 1999. As a result, FO and Emergency (EM) loan programs are most likely to exhaust their lending allocations earlier than normal. Farmers and their lenders seeking to restructure short term obligations over a longer repayment period may be accelerating demand for these programs. Total EM loan funding for fiscal 1999 was actually set below 1998 obligation volume.

### **Most FSA Borrowers Able To Withstand Some Financial Adversity**

ERS analysis of FSA direct and guaranteed loan program borrowers indicates that most FSA borrowers have sufficient financial strength to withstand 1998 profit shortfalls and

continue their operations into 1999. But, much of the ability to withstand financial adversity is due to increased farmland equity, which is not liquid. For some, existing debts will need to be restructured and any operating losses will have to be covered with additional borrowing for the 1999 production year.

Borrowers more likely to experience financial stress include those specializing (more than half their gross income comes from these enterprises) in small grain production and hog enterprises. Only a small percentage of FSA's borrowers specialize in pork production and this will minimize the impact of low hog prices on the quality of its loan portfolio. Because they represent a large share of FSA's loan portfolio, operations specializing in feed grains or cow/calf production are more likely to need loan servicing and further assistance. About a third of FSA's guaranteed debt and a quarter of its direct debt are owed by poultry and dairy farms, which have more favorable income prospects in 1999.

### **Beginning Farmer Lending is Stable; Discrimination Case Settled**

FSA's lending is now targeted to beginning farmers--generally those with less than 10 years experience owning or operating a farm or ranch. Loan obligation volume to beginning farmers was down somewhat for FO programs, but up for OL programs in fiscal 1998. The direct FO program is the most highly targeted program to beginning farmers, with about 70 percent of fiscal 1998 obligations going to these borrowers. Within the direct FO program, the beginning farmer down payment loan program, which provides a 4-percent loan for 10 years on 30 percent of the purchase price of a farm, experienced another decline in obligation volume. Depending on the borrower's needs, this program can be less attractive relative to other FSA financing options.

In January 1999, USDA agreed to a preliminary settlement of a 2-year-old class action lawsuit brought by African-American farmers. The suit alleged USDA discriminated against the plaintiffs when administering its farm loan programs. Under the preliminary agreement, plaintiffs have essentially three settlement options. If the plaintiff can show evidence of discrimination he or she can receive a \$50,000 cash settlement, plus debt write-offs, offsets of tax liability, and retile to lost property if still in FSA's possession. A second option with a greater burden of proof allows for individually tailored settlements that are determined by a third party. Finally, farmers may choose to continue individual cases in court or through USDA's administrative processes.



**Table 17—Farm Service Agency direct farmer loan program delinquencies, September 30, 1986, to September 30, 1998**

| Year 1/ | Number of active cases 2/ |               |            | Principal outstanding     |               |                |
|---------|---------------------------|---------------|------------|---------------------------|---------------|----------------|
|         | Total                     | Delinquent 3/ |            | Total                     | Delinquent 4/ |                |
|         |                           | Total         | Proportion |                           | Amount        | Share of total |
|         | -----Number-----          |               | Percent    | -----Million dollars----- |               | Percent        |
| 1986    | 421,651                   | 134,565       | 31.9       | 27,575.9                  | 6,276.5       | 22.8           |
| 1987    | 388,833                   | 127,577       | 32.8       | 25,763.7                  | 6,592.0       | 25.6           |
| 1988    | 376,388                   | 137,958       | 36.7       | 25,065.0                  | 8,321.7       | 33.2           |
| 1989    | 346,442                   | 114,737       | 33.1       | 23,281.9                  | 8,005.6       | 34.4           |
| 1990    | 299,069                   | 80,341        | 26.9       | 19,544.2                  | 6,138.8       | 31.4           |
| 1991    | 280,528                   | 79,204        | 28.2       | 17,465.5                  | 5,507.5       | 31.5           |
| 1992    | 251,892                   | 73,657        | 29.2       | 15,536.7                  | 4,804.8       | 30.9           |
| 1993    | 224,739                   | 56,099        | 25.0       | 13,775.5                  | 4,116.2       | 29.9           |
| 1994    | 208,130                   | 47,723        | 22.9       | 12,622.6                  | 3,569.9       | 28.3           |
| 1995    | 193,963                   | 52,627        | 27.1       | 11,518.0                  | 3,198.8       | 27.8           |
| 1996    | 182,238                   | 42,101        | 23.1       | 10,580.2                  | 2,419.6       | 22.9           |
| 1997    | 170,422                   | 32,039        | 18.8       | 9,837.5                   | 2,035.7       | 20.7           |
| 1998    | 158,863                   | 28,005        | 17.6       | 9,149.7                   | 1,691.6       | 18.5           |

1998 by major programs

|                       |        |        |      |         |       |      |
|-----------------------|--------|--------|------|---------|-------|------|
| Farm ownership        | 58,521 | 6,409  | 11.0 | 3,775.9 | 193.0 | 5.1  |
| Operating loans       | 48,842 | 11,884 | 24.3 | 2,540.4 | 464.2 | 18.3 |
| Emergency-disaster    | 32,955 | 6,451  | 19.6 | 2,039.7 | 804.2 | 39.4 |
| Economic emergency 5/ | 9,690  | 2,285  | 23.6 | 685.1   | 215.5 | 31.5 |

1/ September 30 of year shown to account for the annual cyclical trend in delinquencies. 2/ May include duplications because some borrowers have loans under several different programs. Prior to 1988 active cases excluded those borrowers who are in foreclosure, bankruptcy, or liquidation status. Active cases do not include loans made to associations. 3/ Prior to 1988 a case was considered delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a case is delinquent if a payment is more than 30 days past due. 4/ Past due principal and interest payments. 5/ Program is no longer being funded.

Source: Farm Service Agency, 616 report, various issues.

**Table 18—Farm Service Agency guaranteed farmer loan program delinquencies, September 30, 1986, to September 30, 1998**

| Year 1/ | Number of active cases |            |            | Principal outstanding     |               |                |
|---------|------------------------|------------|------------|---------------------------|---------------|----------------|
|         | Total 3/               | Delinquent |            | Total                     | Delinquent 2/ |                |
|         |                        | Total      | Proportion |                           | Amount        | Share of total |
|         | -----Number-----       |            | Percent    | -----Million dollars----- |               | Percent        |
| 1986    | NA                     | NA         | NA         | 1664.5                    | 31.4          | 1.9            |
| 1987    | 18,887                 | 1,052      | 5.6        | 2384.0                    | 42.6          | 1.8            |
| 1988    | 27,519                 | 1,298      | 4.4        | 3177.6                    | 54.1          | 1.7            |
| 1989    | 30,016                 | 1,580      | 5.3        | 3243.7                    | 60.6          | 1.9            |
| 1990    | 36,955                 | 1,681      | 4.6        | 4139.8                    | 58.5          | 1.4            |
| 1991    | 40,169                 | 1,904      | 4.7        | 4526.6                    | 59.3          | 1.3            |
| 1992    | 42,189                 | 2,376      | 5.6        | 4923.9                    | 102.8         | 2.1            |
| 1993    | 42,475                 | 2,077      | 4.9        | 5044.8                    | 98.5          | 2.0            |
| 1994    | 44,129                 | 1,659      | 3.8        | 5417.5                    | 82.3          | 1.5            |
| 1995    | 46,838                 | 1,821      | 3.9        | 5933.1                    | 91.3          | 1.5            |
| 1996    | 48,468                 | 2,311      | 4.8        | 6360.3                    | 112.5         | 1.8            |
| 1997    | 49,512                 | 2,540      | 5.1        | 6505.2                    | 124.5         | 1.9            |
| 1998    | 48,795                 | 2,759      | 5.7        | 6537.7                    | 135.4         | 2.1            |

1998 by major program area

|                 |        |       |     |        |       |     |
|-----------------|--------|-------|-----|--------|-------|-----|
| Farm ownership  | 20,606 | 828   | 4.0 | 3041.0 | 33.6  | 1.1 |
| Operating loans | 28,092 | 1,916 | 6.8 | 3487.3 | 101.7 | 2.9 |

1/ September 30 of year shown. 2/ Amount delinquent includes past payments of principal and accrued interest. 3/ May include duplications because some borrowers have loans under several different programs. NA = Not Available.

Source: Farm Service Agency, 4067 Report, various issues.

**Table 19—Farm Service Agency farmer program obligations, September 30, 1986, to September 30, 1998**

| Fiscal<br>year | Obligations 1/                     |                  |            |                | Outstanding<br>principal of farmer<br>programs 2/ |
|----------------|------------------------------------|------------------|------------|----------------|---|
|                | Total                              | Direct (Insured) | Guaranteed |                |   |
|                |                                    |                  | Amount     | Share of total |   |
|                | ----- <i>Million dollars</i> ----- |                  |            | <i>Percent</i> | <i>Mil. dol.</i>                                  |
| 1986           | 4,367.5                            | 2,807.9          | 1,569.1    | 35.9           | 29,240.4  |
| 1987           | 3,080.5                            | 1,515.0          | 1,587.4    | 51.5           | 28,147.6  |
| 1988           | 2,320.7                            | 1,065.8          | 1,271.4    | 54.8           | 28,242.6  |
| 1989           | 2,229.6                            | 1,030.1          | 1,199.5    | 53.8           | 26,525.6  |
| 1990           | 2,193.2                            | 921.3            | 1,271.9    | 58.0           | 23,684.0  |
| 1991           | 2,124.1                            | 633.7            | 1,490.4    | 69.2           | 21,992.1  |
| 1992           | 2,306.4                            | 714.5            | 1,591.9    | 69.0           | 20,460.6  |
| 1993           | 2,135.2                            | 672.7            | 1,432.5    | 67.1           | 18,815.5  |
| 1994           | 2,725.6                            | 881.9            | 1,843.7    | 67.6           | 18,040.1  |
| 1995           | 2,501.9                            | 563.6            | 1,938.3    | 77.5           | 17,451.1  |
| 1996           | 2,683.2                            | 832.3            | 1,850.9    | 69.0           | 16,940.5  |
| 1997           | 2,319.3                            | 744.8            | 1,574.5    | 67.9           | 16,342.7  |
| 1998           | 2,174.1                            | 738.7            | 1,435.4    | 66.0           | 15,687.3  |

1/ Obligations are the dollar amounts of funds loaned or guaranteed, including the dollar amount of interest rate assistance provided on guaranteed loans for years prior to 1993. Excludes obligations for credit sales of acquired property, Indian land acquisition loans, and agricultural resource conservation demo loans. 2/ Total outstanding principal balance of direct or insured and guaranteed program loans at yearend.

Sources: Farm Service Agency, 616 Report, 4067C Report, and 205 Report, various issues.

**Table 20—Farm Service Agency major farmer program level and obligations, fiscal 1998, and program level, fiscal 1999**

| Program                    | Fiscal 1998<br>program level 1/ | Fiscal 1998<br>obligations 2/ | Fiscal 1999<br>program level 1/ |
|----------------------------|---------------------------------|-------------------------------|---------------------------------|
| <i>Thousand dollars</i>    |                                 |                               |                                 |
| Farm ownership (FO)        |                                 |                               |                                 |
| Direct                     | 63,873                          | 84,069                        | 85,651                          |
| Guaranteed                 | 425,000                         | 424,397                       | 425,031                         |
| Operating loans (OL)       |                                 |                               |                                 |
| Direct                     | 560,472                         | 557,098                       | 733,806                         |
| Guaranteed                 | 1,227,906                       | 1,010,974                     | 1,454,981                       |
| Unsubsidized               | 992,906                         | 753,760                       | 1,098,276                       |
| Subsidized                 | 235,000                         | 257,213                       | 356,705                         |
| Emergency disaster (EM) 3/ | 38,477                          | 97,570                        | 25,000                          |

1/ Budgetary appropriations setting limits on the volume of new loans that can be issued during the fiscal year. Some funding is transferable between programs and some programs receive supplemental appropriations during the year. 2/ Actual amount of lending authority committed to new loans or loan guarantees. 3/ An additional \$53 million in unused fiscal 1998 funding is available for use in fiscal 1999.

Source: Farm Service Agency.

## **Legislative and Regulatory Changes Reshape Farm Service Agency Programs**

*New guaranteed lending procedures are implemented.*

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The Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1998 made important changes to Farm Service Agency loan programs. To assist farmers affected by natural disasters, the Act allows producers to receive assistance from more than one USDA program for any loss sustained. Before the change, an applicant was ineligible for Emergency loan (EM) assistance if loss payments had been collected from another program, such as the Federal Crop Insurance Program. However, under the new rules any payments received for the same loss will be deducted from the EM loan qualifying loss amount. The Act also permits FSA to make an EM loan if the applicant is lacking sufficient collateral to cover the loan, as long as the applicant can demonstrate repayment ability.

To assist borrowers, the Act made four changes to FSA debt restructuring rules. First, borrowers who have received debt forgiveness on not more than three occasions on or before April 4, 1996, and have not received any debt forgiveness since are now eligible to receive guaranteed operating (OL) and farm ownership (FO) loans. Second, FSA can now make EM loans to those borrowers who have received not more than one debt forgiveness prior to April 4, 1996, and no forgiveness after that date. Third, in addition to lending to borrowers who have had debt forgiveness under a Section 353 write-down, FSA can also now make annual direct or guaranteed operating loans to borrowers current on payments under a confirmed bankruptcy reorganization plan. Finally, when restructuring a loan under Section 353, a 100-percent cash-flow margin is to be used instead of a 110-percent margin. This means that when calculating the amount of debt a borrower can afford to repay, the borrower is now assumed to need to show ability to repay only 100 percent of the amount needed to cover farm operating expenses, debt payments, and family living expenses.

The Act raised the caps on borrower indebtedness for guaranteed FO and OL loan programs for the first time since the early 1980's to \$700,000, from \$300,000 for the FO program and from \$400,000 for the OL program. The combined maximum total indebtedness for any borrower in both programs is \$700,000. Also, a borrower's combination of either a direct OL and guaranteed OL debt or direct FO and guaranteed FO debt can also not exceed \$700,000. The cap will be increased annually if the "Prices Paid by Farmers Index" as compiled by the National Agricultural Statistics Service for the 12-month period ending August 31 of the immediately preceding fiscal year exceeds the index value for the 12-month period ending August 31, 1996. The adjustment upward, if any, will take place beginning in fiscal 2000.

In raising the caps, it was argued that they had not kept pace with the inflation of farm assets, such as farmland and

modern livestock facilities, and thus were limiting access to FSA credit. Ironically, as part of a USDA initiative to assist hog producers experiencing unprofitable prices, FSA announced it was imposing a moratorium on FSA loans to construct new hog facilities. FSA loan caps serve as a primary mechanism to ensure the programs serve family-sized farms.

### ***Other Borrower Assistance***

To assist borrowers facing financial difficulties, FSA now allows all borrowers to be able to defer payments on OL and FO loans that would normally be due, until the end of the term of the loan. FSA is also notifying guaranteed program lenders that loan-servicing options are available to assist borrowers unable to repay their debts.

Low interest rates should also assist borrowers in restructuring higher-priced debts and improve 1999 cash flows. FSA program rates are now at levels not seen since the 1970's. For example, in January direct OL regular interest rates were set at 5 percent, the same as the Limited Resource Rate. Regular direct FO interest rates were set at 5.75 percent and EM rates remained at 3.75 percent. Under the Interest Rate Assistance Program for guaranteed OL loans, some borrowers will be able to obtain 1999 financing with effective interest rates at 5 percent, or even less.

### ***Guaranteed Lending Streamlined***

New guaranteed loan program rules issued in February 1999 should boost program demand. The changes include two major initiatives: a new Preferred Lender Program (PLP) and a lower documentation requirement for loan requests under \$50,000. The new rules mean redesigned and consolidated application forms, reduced documentation demands, and improved loan servicing requirements. Both initiatives are designed to increase program reach, especially to smaller farming operations. Lenders have long argued that the cost of obtaining a guarantee is often prohibitively high on small loan requests.

The PLP program streamlines application procedures for lenders with a record of farm loan making and servicing on and above the existing certified lending program (CLP). To qualify for the new program, lenders must have made at least 30 guaranteed loans over 3 years and have no more than a 3-percent overall loss rate on guaranteed loans. Upon approval by FSA, PLP lenders will be able to use their own loan making, processing, and servicing procedures instead of those set by FSA. PLP lender loan requests are processed within 14 days, and if FSA fails to act on a loan request within this time, the loan is considered approved.

## Farmer Mac Growth Continues

*A larger investment portfolio boosts profits.*

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Loans sold through the Farmer Mac I secondary market for farm and rural home mortgages and the Farmer Mac II secondary market for USDA guaranteed loans rose during 1998. Farmer Mac I purchases totaled \$424 million, up 83 percent from 1997. The 1998 purchases include \$84 million in swap transactions, where the seller exchanges or pledges loans for a Farmer Mac security or guarantee.

Most of the \$193-million increase in purchases came from greater adjustable-rate mortgage purchases. Purchases of these mortgages rose \$186 million, while purchases of loans with 5- or 7-year balloon payments fell sharply. Despite low interest rates and a nearly flat yield curve, which makes mortgages priced with longer-term interest rates attractive relative to those priced with short-term rates, Farmer Mac had only modest success improving volume of its long-term fixed-rate mortgage products.

Outstanding Farmer Mac I securitized mortgage volume grew 40 percent to \$796 million at 1998 yearend. Farmer Mac issued \$302 million in new agricultural mortgage-backed securities (AMBS) during 1998, up from \$198 million in 1997. But, the 1998 volume includes \$76 million of AMBS that were retained by Farmer Mac. Therefore, issuance of AMBS through public sales was up only slightly in 1998. Instead of selling to investors, Farmer Mac is holding more mortgages in portfolio. Such holdings rose 350 percent to \$168 million at yearend.

Farmer Mac purchases of USDA-guaranteed portions of farm loans, rural business and industry loans, and community development loans totaled \$120 million, up from \$95 million in 1997. Farmer Mac II volume may pick up in 1999, because USDA guaranteed lending is expected to rise. Outstanding volume grew modestly to \$337 million and cumulative volume since 1991 rose to \$487 million.

### **Volume Should Rise in 1999**

The Farmer Mac I market should grow in 1999 as its seller base expands. If the liquidity in the rural banking system weakens, volume growth could accelerate. So far AgAdvantage, which was introduced to help banks with liquidity needs last year, has yielded only modest interest. Under this funding program, Farmer Mac purchases general obligation securities (bonds) issued by lenders that are collateralized by Farmer Mac I or Farmer Mac II qualified farm mortgages rather than purchasing the loans outright from lenders and then selling AMBS to investors.

One potential problem with Farmer Mac's long-term fixed-rate products is that they require a yield maintenance fee. Such a fee means that the borrower can not make payments ahead of the scheduled amortization without paying a penalty if interest rates have fallen from the original date of the mortgage. Borrowers having taken out a mortgage just a

couple years ago and wishing to refinance at today's lower rates now face stiff prepayment charges.

A fall in farm income could spur Farmer Mac I volume. Borrowers experiencing or anticipating weaker cash flows may seek to restructure short-term debt by pledging their farmland assets. Even those farms with good cash flows may seek to lock in today's low farm interest rates. Conversely, weaker farm profitability will reduce purchase money transaction volume as farmers cut back on land purchases and capital investments. Already, in some farmland markets, loan demand and farmland prices have softened. Also, a weaker farm economy would lower the volume of debt meeting Farmer Mac's loan standards.

A decline in loan quality would also encourage lenders to sell off farm loans to minimize credit risk and conserve capital. This incentive will be especially true for agricultural banks and other specialized farm lenders, such as the FCS. However, sales can only be made of those loans that meet Farmer Mac standards. In January 1999, Farmer Mac announced a \$408 million long-term commitment to purchase loans from a Farm Credit Bank. In return for an annual guarantee fee, the FCB will be able to sell delinquent loans to Farmer Mac from an identified pool of loans.

### **Investments Boost Profits**

Farmer Mac profits increased by \$1.1 million to \$5.7 million in 1998. A \$1.2-million increase in collected guarantee fees was offset by higher operating expenses, a decline in gains from the issuance of AMBS, and a boost in the provisions for loan losses. Therefore, the higher reported profit was due to a \$3.4-million increase in net interest income.

Net interest income rose in part from a \$460-million rise in outstanding investment securities and cash held at yearend. Interest income from investments and cash accounted for 61 percent of Farmer Mac's entire gross interest income for the year. Farmer Mac's investment and cash portfolio of \$1.2 billion is nearly as large as its \$1.3 billion in on- and off-balance sheet loan related assets and has grown from just \$137 million 2 years ago. While all government-sponsored enterprises have sizable investment portfolios, Farmer Mac's is exceptionally high relative to its core business. Without the additional income from its investment portfolio, Farmer Mac would have been less profitable.

Beginning in February 1999, the Farm Credit Administration has the authority to require potentially higher risk-based capital standards for Farmer Mac. As yet, no plans have been announced. Loan delinquency rates have been small, but jumped to 3.8 percent on guaranteed securities issued prior to 1996 that carry a 10-percent subordinated participation interest. Farmer Mac's loan standards should minimize its loan default losses as long as farm credit quality does not fall too steeply.

## Rising Farmland Values Help Farm Lenders and Farmers Holding Real Estate-Backed Farm Loans

*Farmland value increased during 1997, continuing an 11-year trend and helping to strengthen the farm sector's balance sheet. Further gains are expected when 1998 results are tallied.*

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Farmland currently accounts for roughly 79 percent of farm sector assets. Some 51.7 percent of total farm sector debt at the end of 1998 was real estate debt, composed of either mortgages for purchase of farmland or short- or intermediate-term debt secured by farmland. Consequently, the financial security of farm sector borrowers and their lenders is affected by changes in farm real estate values.

Farm real estate values have increased continuously since 1987, significantly improving the financial position of many farm businesses. Although the financial performance of different farm sector segments varied, farmland values across the Nation were up during calendar year 1997. USDA's estimated value of all agricultural real estate reached an all-time high of \$1,000 per acre as of January 1, 1998, up 6.2 percent from a year earlier. Increases ranged from 3.0 percent in the Northeast to 10.0 percent in the Corn Belt. In real terms, the national average rose 4.1 percent.

The value for January 1, 1998, was 66.9 percent above the trough of \$599 reached in early 1987, an increase of 19.7 percent in real terms. Since 1987, five regions have exhibited gains of 20 percent or more (Appalachia, Corn Belt, Lake States, Northeast, and Pacific) in real terms, while the Southeast and Northern Plains have seen increases of 18.2 and 14.8 percent, respectively. The other three regions did not experience their lowest real values until 1992-93. Since then, these regions have seen real growth of 15.4 percent (Delta), 14.7 percent (Southern Plains), and 29.9 percent (Mountain).

Agricultural land values are primarily determined by the income earning potential of the land, as measured by expected returns from crops and livestock. However, in many areas, nonagricultural factors are playing a greater role. Where nonfarm influences are involved, farmland is often drawn out of agriculture for residential, commercial, or recreational uses. Farmland values in rapidly urbanizing areas or in areas popular as recreation destinations tend to be higher than would be predicted based on agricultural returns alone. These premiums above the purely agricultural value of the land represent the discounted present value of potential nonagricultural development.

While the effect of population on the per acre value of farmland can be substantial for individual parcels, small areas around cities, and even for counties within a metropolitan area, the total farmland area subject to urban influences is small compared to the total farmland area in the entire United States. Research has found that 10 to 20 percent of the farmland in the United States may be subject to urban influences, with the degree of influence for a particular parcel varying directly with its proximity to metropolitan areas. In terms of regional averages,

agricultural production value is still the largest component of the market value of farmland for all regions except the Northeast.

Areas with the highest potential for development include those with the most rapidly increasing populations, including many of the Mountain and Pacific States, as well as Florida, Georgia, North Carolina, Tennessee, and Texas. Many of these States are also home to recreational attractions, such as parks, mountains, beaches, or cultural amenities.

Federal farm programs contribute to farmland values by increasing the expected returns from land and reducing the income variability of farm operations. Research has shown that the increased net returns for owners of farmland are partially "capitalized" into per acre values. The degree to which payments are capitalized has been found to be largest in the grain-growing regions of the Northern Plains and the Corn Belt, as well as scattered areas of the Southern Plains, Northeast, and Mountain regions.

While all States reported increases in estimated land values during 1997, recent market conditions suggest that a repeat performance was unlikely during 1998. The Federal Reserve Banks of Dallas, Kansas City, and Minneapolis conduct quarterly surveys of agricultural bankers in their regions. Reports for those regions indicate that farmland values were generally up or unchanged in early 1998, but began declining during the latter part of the year. In addition, Iowa State University reported a Statewide decrease of 1.9 percent in the value of farmland from November 1997 to November 1998. That decrease is in sharp contrast to the 9-percent increase reported by Iowa State University for the prior 12 months. The size and extent of changing values across the country during 1998, and how they balance out at the national level, remain to be seen: the National Agricultural Statistics Service plans an April release of USDA's State estimates for 1998.

Decreasing farmland values, in and of themselves, if not widespread, are not necessarily a concern. Even as national estimates of land value have trended up since 1986, it has been rare for land values in all States to increase in a given year. In fact, since 1987, it has only happened twice--1997 and 1993. This is remarkable considering the strong farmland market conditions of just a few years ago, indicating that even in the best of years, farmland values across the Nation experience both positive and negative changes. How long the unfavorable outlook continues for some key crop and livestock prices will have an important impact on the direction of farmland value changes in 1999 and beyond.

**Table 21—Average per acre value of farm real estate, by farm production region, 1987, 1997, and 1998**

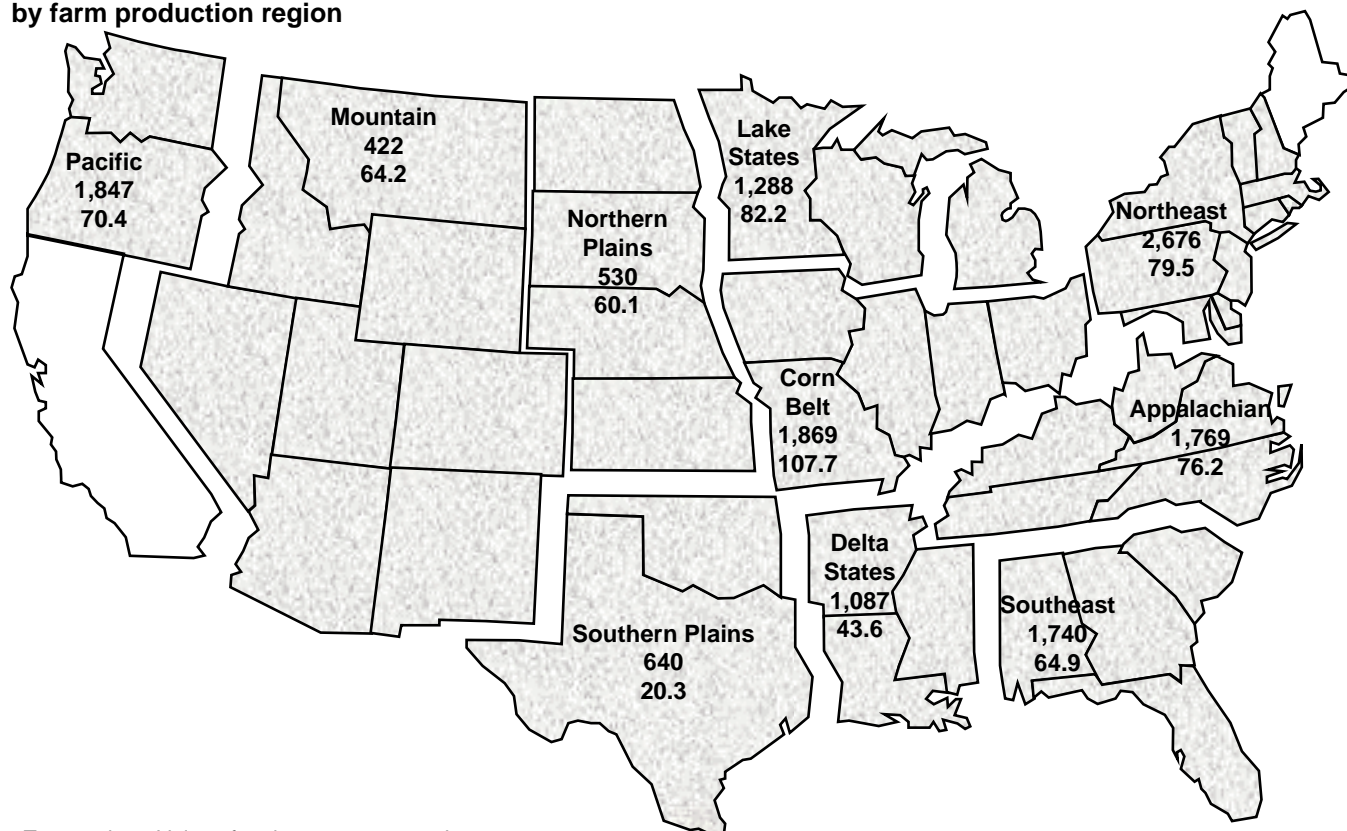
| Region          | 1987              | 1997  | 1998  | Change<br>1997-98 | Change<br>1987-98 |
|-----------------|-------------------|-------|-------|-------------------|-------------------|
|                 | -----Dollars----- |       |       | -----Percent----- |                   |
| Northeast       | 1,491             | 2,599 | 2,676 | 3.0               | 79.5              |
| Lake            | 707               | 1,205 | 1,288 | 6.9               | 82.2              |
| Corn Belt       | 900               | 1,699 | 1,869 | 10.0              | 107.7             |
| Northern Plains | 331               | 504   | 530   | 5.2               | 60.1              |
| Appalachian     | 1,004             | 1,685 | 1,769 | 5.0               | 76.2              |
| Southeast       | 1,055             | 1,683 | 1,740 | 3.4               | 64.9              |
| Delta           | 757               | 1,041 | 1,087 | 4.4               | 43.6              |
| Southern Plains | 532               | 594   | 640   | 7.7               | 20.3              |
| Mountain        | 257               | 403   | 422   | 4.7               | 64.2              |
| Pacific         | 1,084             | 1,774 | 1,847 | 4.1               | 70.4              |
| U.S.            | 599               | 942   | 1,000 | 6.2               | 66.9              |

1/ Value data are as of February 1 for 1987 and January 1 for 1997-98.

Source: National Agricultural Statistics Service.

Figure 15

**Average per acre value of farm real estate, 1998, and percent change, 1987-98, by farm production region**



Top number: Value of real estate per acre, January 1998

Bottom number: Percent change, January 1, 1987 - January 1, 1998

Source: National Agricultural Statistics Service.

## Federal Payments Mitigate Loan Repayment Problems

*Omnibus legislation provides an additional \$5.8 billion in assistance to the sector.*

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A Federal cash infusion into the farm sector in the second half of 1998 and first half of 1999 will blunt the impact of lower commodity prices on farm loan performance. Government payments are helping farmers make their 1998 debt payments and fund 1999 operating expenses. During calendar 1998 alone, government payments to farmers are estimated to have totaled \$12.9 billion. Much of this Federal transfer occurred in the last 4 months of the year, and was aided by two pieces of legislation.

The government's first response to declining commodity prices and natural disasters was passage of the Emergency Farm Relief Act of 1999 (P.L. 105-228). This legislation, which was signed into law on August 12, 1998, amended the Federal Agriculture Improvement and Reform Act of 1996 (the 1996 Act) by allowing producers to receive all of their \$5.5 billion in 1999 production flexibility contract (PFC) payments in late 1998 or early 1999, as opposed to half at those times. However, relatively few elected to move the PFC payments into 1998 as only \$946 million of 1999 payments were made to farmers through December 1998.

Besides accelerating 1999 payments, the Omnibus Consolidated and Emergency Supplemental Appropriations Act (P.L. 105-277), which was signed into law on October 21, 1998, provided \$2.857 billion in market loss payments. These payments were disbursed in November 1998. Before these market loss payments arrived, producers had \$3.1 billion of their 1998 PFC payments during the July to September period. Therefore, \$11.5 billion was either paid to or became available to producers through the PFC payment system between July 1998 and January 1999.

### **Other Assistance to Crop Producers**

The 1999 Omnibus Spending Act provided another \$2.375 billion to assist producers in recovering from production losses. Under the \$2-billion Crop Loss Disaster Assistance Program, farmers receive cash payments for either eligible 1998 production losses or multi-year losses. Sign-up for the program started February 1 and payments will be made after the sign-up ends.

The remaining amount of the assistance will be used to lower premiums on Federal crop insurance by an estimated 30 percent for the 1999 production year. Farmers suffering from 1998 crop production losses had collected \$1.5 billion in loss indemnity payments from this program through January 1999.

The 1996 Act provides revenue support when prices fall below the established CCC commodity loan rates. As prices for many grains fell below established loan rates, farmers became eligible to collect loan deficiency payments (LDP). By the end of 1998, \$1.8 billion in LDP payments had been made for 1998 crops, with most of the payout occurring in the last 4 or 5 months of the year. The payment rate was

still brisk in early 1999, with LDPs totaling another \$200 million in the first 3 weeks of the year.

USDA's conservation programs, such as the Conservation Reserve Program (CRP) and the Wetlands Reserve Program, provide over \$2 billion per year in payments to farmers and rural landowners. In October 1998, USDA made \$1.38 billion in CRP rental payments. A substantial portion of these payments goes to farmers. The average program participant received nearly \$5,000 in CRP payments in October.

### **Assistance to Livestock Producers**

The bulk of farm payments and direct assistance goes to crop producers, but livestock producers did get some financial aid. The 1999 Omnibus Spending Act provided \$200 million for a Livestock Assistance Program (LAP), which provided payments to eligible livestock producers who suffered severe grazing losses in 1998. Sign-up for the program ended February 5, 1999.

The spending legislation also earmarked \$200 million in financial assistance to dairy producers and smaller amounts for producers of mohair, honey, raisins, and other commodities. Responding to record low hog prices, USDA in January announced \$50 million in cash payments for small hog producers. Sign-up for this program ran the first 2 weeks of February and the maximum payment to any operation was limited to \$2,500.

### **Some Perspective on Farm Assistance**

Total fiscal 1999 assistance to farmers is now estimated to total \$18 billion. Federal assistance goes primarily to certain types of farms. For example, producers of corn, soybeans, and wheat received 82 percent of the loan deficiency payments made in 1998, while current or former corn and wheat producers receive 46 percent and 26 percent of annual PFC payments, respectively. For these farms, government payments are pivotal to their financial well being. (More on the distribution of government payments can found in the December 1998 issue of *Agricultural Income and Finance*).

While total government payments have risen, they remain below the levels of the 1980's. In fiscal 1986, at the peak of the 1980's farm financial stress, net CCC outlays for farm income and price support programs hit \$25.8 billion. During the 1980's, net CCC outlays totaled \$133 billion, with \$82 billion going to farmers in the form of direct cash payments or cash-equivalent commodity certificates. For the 9 years beginning in fiscal 1990, farm revenue and income support mechanisms are estimated to have totaled \$76 billion, with \$52 billion made in direct payments.

## Tax Reductions Improve Farm Loan Repayment Capacity

*Full-time farmers with losses and low-income farmers have more income with which to repay lenders.*

The 1999 Omnibus Appropriations Act (P.L. 105-277) also contained tax provisions designed to assist farmers. Lenders should benefit from the after-tax improvement in farmer repayment capacity. The new law contains four provisions reducing farmers' Federal taxes. These include allowing farm losses to be carried back 5 years, delaying taxes on production flexibility contracts until payment is received, making income-averaging permanent, and increasing the self-employed health insurance deduction. These provisions will reduce farmers' taxes by about \$1 billion over the next 9 years, with about \$90 million of relief in 1999. In addition, a recent Internal Revenue Service (IRS) ruling restores eligibility for about \$75 million annually in earned income tax credits to low-income farmers.

The five important developments under P.L. 105-277 and the IRS ruling are as follows:

(1) *Farm Loss Carryback Provides Tax Refund*--A net operating loss (NOL) occurs when business expenses exceed gross income. Under prior law, a net operating loss could offset income by being carried back 2 years (3 years for farmers in disaster areas) and forward 20 years. The NOL carryback creates a tax refund. Two-thirds of all farm sole proprietors report taxable farm losses annually, but most offset those losses in the same year with off-farm income. In 1994, about 75,000 farmers generated \$1.6 billion in NOLs that could be carried to other tax years. The Act extended the NOL carryback period to 5 years for farm losses occurring after 1997. Farmers who have large farm losses but do not have much off-farm income can receive a larger refund of their Federal income taxes paid in previous years. An estimated 100,000 farmers will qualify for the carryback this year because relief is targeted to farmers facing financial stress.

(2) *Constructive Receipt Avoided on Production Flexibility Contracts*--A cash basis farmer generally reports income in the year it is received. However, if a taxpayer has an unrestricted right to demand payment, the taxpayer has constructive receipt even if payment is not received. Production flexibility contract (PFC) payments under the 1996 Farm Act usually are made in two parts, with the first in December or January at the farmer's option. The December option potentially creates constructive receipt for farmers who choose January payment. In addition, the Emergency Farm Financial Relief Act of 1998 created an option to receive all of the fiscal year 1999 PFC payment as early as October 1998, potentially resulting in constructive receipt of the full 1999 payment. All farmers, therefore, would have been obligated to report 1999 PFC payments in tax year 1998. Farmers who chose to wait until 1999 for

their PFC payments may have faced cash flow problems. The Omnibus Appropriations Act allowed farmers to report PFC payments in the year received and avoid the constructive receipt problem. The provision is retroactive to the implementation of PFCs in 1996.

(3) *Income Averaging Made Permanent*--Some farmers may pay more taxes over time if variable income periodically pushes them into higher tax brackets. The Taxpayer Relief Act of 1997 created income averaging by allowing farmers to shift a specified amount of farm income to the preceding 3 years. If the marginal tax rate was lower during one or more of those years, income averaging will reduce taxes. The Omnibus Appropriations Act made income averaging permanent, rather than expiring at the end of 2000. Income averaging is expected to lower farmers' tax liabilities by about \$50 million in 1999. Making the provision permanent provides tax savings after 2000.

(4) *Deduction Accelerated for Self-employed Health Insurance*--The self-employed health insurance deduction is especially important for farmers who purchase insurance on their own. Over 300,000 farmers used the deduction in 1996. The deduction was scheduled to increase from 45 percent in 1998 to 100 percent by 2007. The Omnibus Appropriations Act accelerated the schedule beginning with a 15-percent increase to 60 percent in 1999. This increase will allow farmers to deduct about \$500 more in health insurance premiums, on average. The deduction rises to 70 percent in 2002 and to 100 percent in 2003.

(5) *Earned Income Tax Credit Restored for Some Farmers*--The earned income tax credit provides a refundable tax credit to low-income taxpayers. The amount of the credit varies with the number of children and the level of income. In an effort to better target the credit beginning in 1996, taxpayers who had relatively small amounts of investment income became ineligible for the credit regardless of their other income. The investment income limit was \$2,200 of interest, dividends, or net capital gain. Since IRS initially included the sale of business assets in determining net capital gain, as many as one out of every five farmers who formerly qualified became ineligible. However, in Revenue Ruling 98-56, IRS indicated that sales of breeding and dairy livestock and similar business assets should not be considered net capital gains for the investment income test. This restores eligibility to about 50,000 farmers and makes an estimated \$75 million available each year, primarily to low income dairy and livestock farmers. These farmers may also amend their 1996 and 1997 returns, and could become eligible for matching State credits.



## Global Financial Crisis Is a Continuing Problem for the Rural and Farm Sectors

*Farm and rural lenders could be affected by the farm sector's economic slowdown, caused in part by global financial adversity.*

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On July 2, 1997, the Thai baht declined 15 percent against the U.S. dollar. Thus began a series of crises that started in Asia, but spread to Russia and Latin America. This series of challenges has raised questions not only about development strategies in a set of countries that were heretofore referred to as the Asian Tigers, but also about the very core of international policy and response to financial difficulties by the International Monetary Fund and the U.S. Treasury. If the crisis did not undermine the demand for U.S. agricultural exports at a time of already low prices, it would only be a curiosity for U.S. agriculture. Unfortunately, however, the economic instability reinforces a set of factors that play more significantly on rural America than in the overall U.S. economy.

### **What Happened to the Rising Stars?**

Although the full story of what caused the crisis may never be fully agreed upon, it is clear that the resultant economic instability was the most significant threat to the global economy since the Third World Debt Crisis of the early 1980's and perhaps even harking back to 1929 and 1930. The Asian economies that were pulled into the economic strain had experienced extraordinary growth during the previous decade. Korea had an annual average real GDP growth rate of 8.9 percent, while Thailand, Malaysia, and Indonesia had growth rates of 9.5, 7.7, and 7.6 percent, respectively.

Growth of that magnitude over a sustained period of time requires significant institutional development to support continued growth. In the cases of the Asian economies, two particular problems arose. Bank lending continued to be the major vehicle for financing the economic expansion and capital accumulation was the major component of growth. Thus more than 70 percent of financing was done through commercial banks, and gross domestic capital formation exceeded 35 percent in all these economies.

These two phenomena are closely related to the eventual financial collapse in these economies. The very high rate of investment without significant productivity growth drove down the return to investment. This translated into substantial nonperforming loans for the banks, which borrowed short term from international lenders to maintain their liquidity. The weaknesses in the banking system led to a loss of confidence that precipitated a banking crisis and flight of capital from the affected countries. The flight of capital put pressure on the currencies of the affected countries. This depleted the foreign reserves of their respective central banks, which tried to defend the fixed exchange rate policies in their countries. Thus the onset of the financial challenges.

### **The Role of the International Monetary Fund**

The IMF played a major role once the crisis began. There is a good deal of controversy about that role. The IMF prescribed the traditional remedy for countries facing capital flight. It proposed high interest rates, government constraint, and banking discipline and reform. The effect of these efforts, particularly in Indonesia, the worst hit of the Asian crisis countries, was to drive the economic difficulties into a panic involving runs on banks and a total loss of liquidity of the financial/banking sector. Funds that were made available went to repay international lenders and did not lead to renewed liquidity of the banking system. The consequence of using traditional remedies for this set of economic challenges has been a fundamental rethinking of the role of the IMF and the potential for a significant redesign in the way the IMF functions.

### **Longer Term Outlook**

The short term resolution of the financial difficulties are not yet fully known. The initial instability in Asia precipitated subsequent crises in Russia and Brazil. Several longer-term features of these new challenges are already clear.

*The resolution is likely to take much longer than anyone anticipated--*Structural adjustments to strengthen the institutional foundations for growth will take at least 3 to 5 years to accomplish. The need to write off bad debt, estimated to be as high as 40 percent of GDP in Japan, also will take some time to digest. Evolving a new and accountable way of doing business dependent more on expected performance than relationship also will take time.

*Growth in the crisis countries is unlikely to recover to previous high levels--*Growth under the previous regimes was mostly dependent on capital accumulation. The post-crisis growth pattern needs to be more dependent on productivity growth.

### **What Does This Mean for the United States?**

The international financial instability has had relatively little effect thus far on overall economic growth in the United States. However, the composition of GDP growth has shifted away from trade sensitive sectors toward sectors that face relatively little foreign competition or that are more sensitive to capital costs and capital availability. Net foreign investment in the United States provided \$117 billion more in loanable funds to the U.S. economy in 1997 than 1995. Although the financial strain abroad has resulted in reduced growth in real exports from nearly 13 percent in 1997 to 1.5 percent in 1998, stronger growth in consumption, residential housing, and business fixed investment made up for the drag

on the economy caused by the slowdown of export growth, the associated widening of the trade deficit, and slower growth in business inventories. Thus, overall U.S. real economic growth remained virtually unchanged at nearly 4 percent in 1998.

The steps taken by the Federal Reserve to mitigate the impact of negative foreign developments on the overall U.S. macroeconomy resulted in lower interest rates and overall greater credit availability for business and consumers in 1998. For consumers, mortgage rates fell nearly 70 basis points in 1998. The strong valuation of equities facilitated the raising of funds in credit markets by lowering the debt-to-equity ratio of firms and by increasing the value of collateral available for loans. Credit availability was further increased because the United States was the recipient of large capital inflows from abroad.

Monetary policy was eased in the fall partly in response to the potential threat of a deepening global financial crisis. In the first three quarters of 1998, overall credit in the economy expanded at an annual rate of 6.2 percent with consumer credit and nonfinancial business credit expanding at rates of 8.4 and 9.9 percent respectively. The fall in inflation from 1.9 percent in 1997 to 1.0 percent in 1998 was largely due to falling energy, food, and import prices coupled with significant excess capacity in manufacturing, all in part a consequence of the global financial crisis. Declining inflation throughout 1990's has lowered inflationary expectations and reduced the inflation premiums that lenders and equity holders demand for bearing the risk of higher inflation.

### ***What Does This Mean for U.S. Agriculture and the Rural Economy?***

Although the global financial crisis is likely to have only marginal impacts on the overall growth of the U.S. economy, the impact on agriculture and the rural economy is likely to be significantly greater. Several features of the crisis suggest this. While the overall trade dependence of the United States is relatively small with total exports accounting for only 8 percent of GDP, agriculture is much more dependent on trade. Between 20 and 30 percent of farm income is directly dependent on exports. Thus exports are about 2.5 times as significant for agriculture as for the economy as a whole.

While trade for the total agricultural sector is substantial, trade for subsectors of agriculture is even more important. For example, production from more than a third of U.S. cropland is exported. USDA projections for crop year 1998/99 show exports as a percent of production equal 40 percent for wheat, 48 percent for rice, 43 percent for soybeans (including meal), 17 percent for corn, and 32 percent for cotton. These export shares are lower than in the

early to mid-1990's, to some extent due to the decline in demand from the Asian countries and increased competition from elsewhere.

Prices of oil and other commodities also have fallen substantially. The response to the crisis in the developing world is to reduce imports and expand exports. Given the relatively fixed demand for commodities, the change in exports and imports has been a major factor in the lowering of prices. Not only are nominal oil prices at historically low levels, (current acquisition cost of \$10.50 a barrel is below 1973 levels in real terms as well) but other commodity prices also are significantly lower than earlier in the 1990's. For instance, wheat prices declined 35 percent, corn prices 40 percent, soybean prices 20 percent, and cotton prices 15 percent between highs in 1995 and lows in November 1998. Of our major bulk export commodities, only rice increased in price, and by only 1.2 percent.

Slower world growth and a strong dollar have also harmed other trade sensitive industries such as oil and gas exploration, and to a lesser extent basic manufacturing. Given rural America's relatively greater dependence on these industries, rural growth has been hampered by the Asian crisis.

From a cost perspective, agriculture does benefit from lower general inflation and falling energy and fuel costs. Agriculture also benefits from lower interest rates. The sensitivity of agriculture to interest rates relative to nonagricultural nonfinancial corporate business is reduced by two main factors. First, the debt-to-asset ratio for agriculture is roughly one-third that of nonfarm nonfinancial corporate business. Second, interest rates on agricultural loans tend to be less volatile than interest rates on nonagricultural loans. In part this reflects how smaller business loans are typically priced by financial institutions, especially commercial banks. These positive impacts of the crisis are relatively small for agriculture compared with the negative impact of the trade effects.

The global financial crisis will have lingering effects on world agricultural markets long after the crisis itself is settled. The period required to restructure the affected economies alone suggests that this problem will be important for agriculture for at least the next 5 years. The longer term consequence of slowing growth in Asia will reduce the growth in demand for U.S. bulk exports and push the United States more toward high value exports, a pattern which was strongly initiated in 1986, but which will continue even stronger into the future. It appears likely that continued diversification away from traditional crops will accelerate. The new policy environment in the United States that allows increasing flexibility in crop selection and production could facilitate a substantial changes in agriculture over the next 10 to 20 years.

## Demand for Farm Credit Moderates in 1998

*Farm debt expanded 3.0 percent in 1998 compared with 6.0 percent in 1997. The dollar volume of farm loans outstanding expanded for all lender categories, except the Farm Service Agency.*

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### **Total Farm Debt Projected To Decrease**

The expected 0.5- to 1-percent decline in farm business debt in calendar 1999 will be the first decrease in 7 years (following a succession of increases during 8 of the previous 9 years with the last decline occurring in 1991). The decline to about \$169.1 billion by the end of 1999 will still leave farm debt the second highest since 1985, below only 1998. The expected decline of about \$1.2 billion during 1999 follows an expansion of \$31.3 billion or 22.5 percent since yearend 1992. Some \$14.3 billion (45.6 percent) of this increase came in 1997-98. But farm debt at yearend 1998 was still \$23.4 billion below its 1984 peak.

The 3.0-percent increase in farm debt outstanding in 1998 was the fifth largest annual gain since 1981. Since the 1989 low, total farm debt during 1989-98 grew 23.6 percent, while the GDP chain deflator increased 25.6 percent. But for yearend 1992 to the end of 1998, total farm debt grew 22.5 percent while the GDP chain deflator increased 12.7 percent. Some 60 percent of the nominal \$32.5-billion increase in 1989-98 occurred during 1996-98.

The forecast decline for farm debt in 1999 reflects a change in farmers' outlook toward debt. The sector learned during the farm financial crisis of the 1980's that borrowing cannot substitute for adequate cash flow and profits. The 1999 forecast debt decline partially reflects the likelihood of fewer new capital investments and a relatively low incidence of farms borrowing their way out of cash-flow problems. Adequate levels of working capital and additional government support are helping to reduce loan balances and hold down new borrowing. Expected 1999 price and income levels and uncertainty about the economic recovery of nations that are major importers of U.S. farm products will cause farmers to be cautious concerning debt use.

The demand outlook for 1999 indicates that loan demand will continue to moderate because farmers do not know how long lower prices and export problems will last. Trends in the general economy should continue to maintain stable interest rates, which will tend to sustain farm loan demand. Both net farm and net cash incomes will decline in 1999, but farm sector equity by the end of the year will be almost \$47.8 billion more than in 1997. But for many farmers, stable or even lower interest rates may not be sufficient to offset the effect of lower net cash income. Farmer use of net repayment capacity is thus forecast by ERS to rise to 57 percent in 1999, compared with 55 percent in 1998 and 53 percent in 1997.

### **Demand for Credit Lessens for Both Production and Real Estate Loans**

Agricultural lenders generally found that demand for agricultural credit moderated across the board in 1998. Total real estate and nonreal estate outstanding loan volume increased 2.6 and 3.4 percent, respectively. This was down from the respective gains of 4.5 and 7.6 percent a year earlier. On a calendar year basis, outstanding total loan volume increased in 1998 for all lenders except the Farm Service Agency (FSA).

*Nonreal estate loan volume* increased \$2.7 billion in 1998. Some 55 percent of the total farm debt growth occurred in the short- to intermediate-term nonreal estate loan portfolio, just slightly below the nonreal estate share of loan growth experienced in 1997. Outstanding nonreal estate loan volume of the FCS increased \$597 million, or 3.9 percent, compared with \$1.51 billion, or 3.6 percent, for commercial banks. Despite adequate FSA loan authority in fiscal 1998, total FSA nonreal estate loans outstanding are forecast to decrease 4.1 percent in calendar 1998 to \$4.1 billion.

Requests for FSA loans are one indicator of farm financial health. FSA made direct operating loans during fiscal 1998 of \$557 million, up 8 percent from fiscal 1997. Total direct FSA obligations (operating, ownership, and emergency) declined 0.8 percent from fiscal 1997, to \$739 million. Total FSA nonreal estate farm business loans outstanding on a calendar year basis are forecast to be about the same in 1999 as in 1998.

*Nonreal estate business loans* outstanding should decrease about 0.5 percent in 1999 because of a number of factors affecting demand for production credit. Farmers are expected to spend about \$186.1 billion for agricultural inputs in 1999, up only 0.5 percent from 1998. This is an increase of \$975 million, but is \$2.4 billion (1.3 percent) below 1997 and is \$3.6 billion (2.0 percent) above 1996. The estimated 1998 and 1999 decreases relative to 1997 would be the first significant decline in total expenses since the 1985 and 1986 declines of 6 percent. Total cash production expenses are forecast to increase only 0.4 percent (\$713 million), but will be 1.7 percent (\$2.9 billion) below the 1997 level. Expenditures for seeds, fertilizer, and agricultural chemicals, at \$26.6 billion, are forecast to be up a little more than 1 percent from 1998, but nearly the same as in 1997. These expenses leveled off in 1998 after an 86-percent increase during 1987-97, and the projected same

expenditure level in 1999 marks a continuation of the spending plateau. Fuel prices and interest rates at the end of 1998 were the lowest in recent years. Fuel costs are forecast to increase slightly in 1999, but farm sector interest expenses are expected to decline 3.1 percent to \$13.7 billion, a drop of \$431 million.

Total planted acres for principal field crops in 1999 are forecast to decline, but continued use of the same production practices will likely leave input use near 1997 and 1998 levels. Fertilizer expenses will be somewhat higher in 1999, but will be about \$400 million lower than in 1997. Projections for planted acreage in 1999 for the eight major crops (corn, sorghum, barley, oats, wheat, rice, upland cotton, and soybeans) are for a decline of 3.3 million acres or 1.3 percent to 252.8 million acres. The largest projected decrease from 1998 is 3.4 million acres (5.6 percent) for wheat followed by 1.7 million acres (5.2 percent) for corn. Soybean acreage is forecast to increase 1.1 million acres (1.5 percent) with rice, sorghum, barley, oats, and cotton acreage only up slightly (0.1-0.2 percent). These eight crops accounted for virtually all of the changes in principal crop acreage in recent years.

In the January *Winter Wheat and Rye Seedings* report, USDA reported that the area seeded to winter wheat in the fall of 1998 totaled 43.4 million acres, down 7.7 percent from a year earlier. The initial acreage projections for spring wheat and other field crops will be issued in USDA's *Prospective Plantings* report to be released on March 31.

Unit sales of farm tractors, combines, and other farm machinery continued the strong trend of recent years into 1998, but a demand malaise developed late in the year. Purchases of wheeled farm tractors totaled 135,523 units in 1998, up 5.6 percent from 1997. Combine purchases were up 7.9 percent to 10,396. But sales of 2-wheeled tractors 100 HP and over declined 7.6 percent and 4-wheel tractor sales dropped 29.8 percent. Farm machinery manufacturers, such as Case and Deere, in December took steps to reduce output by placing workers on layoff or extended leave. Overall farm machinery sales are forecast to decline significantly in 1999. The Equipment Manufacturers Institute (EMI) projects an 8.1-percent decline for 2-wheel drive tractors, a 17.3-percent drop for 4-wheel drive tractors, and a 15-percent decrease for self-propelled combines. There is widespread expectation that 1999 sales will decline across a range of equipment. In addition to tractors and combines, EMI projects 1999 declines for 13 of its 16 equipment categories, with increases shown only for two replacement parts categories (farm field and farmstead-type equipment) and hog mechanization equipment.

Lessened or moderated sales in 1999 will affect the demand for short- and intermediate-term farm loans. A larger share of this demand is now met by "captive" finance companies owned by machinery companies as opposed to the more traditional institutional lenders. This debt appears in the "individual and others" category in ERS's farm nonreal estate debt data series.

*Real estate farm loan volume* increased \$2.2 billion in calendar 1998. Outstanding FCS real estate loans increased 3.7 percent and accounted for \$1 billion or 45.3 percent of the increase. Commercial banks' loan volume increased 5.7 percent and accounted for \$1.4 billion or 64.3 percent of the total. Both the FSA (-5.7 percent) and individuals and others (-1 percent) categories experienced declines. FCS long-term real estate loans increased 4.4 percent during the year ending September 30, 1998, reflecting demand for this subset of mortgage credit. Among life insurance companies, total lending activity was up 2.3 percent during calendar 1998.

*Farm real estate loans outstanding* should decrease about 1 percent in 1999. Activity in the land market is likely to reduce the demand for mortgage loans (real estate credit) in 1999. Per acre U.S. farmland values increased an estimated 5.8 percent in 1997 and 5 percent in 1998, and are expected to advance 1.5 percent in 1999. This will make 13 straight years (1987-99 inclusive) of increases. Moreover, the 1994-98 increases represent the strongest yearly gains, in both nominal and real terms, since values began to recover in 1987.

The forecast increase of 1.5 percent in 1999 farmland values is not only lower than in recent years, but as an aggregate number it masks much regional variation. Recent 1998 farmland value surveys conducted by the Chicago, Minneapolis, and Kansas City Federal Reserve Banks showed a general weakening of farmland values and even declines in some areas. The Chicago District experienced a 1-percent decline in the third quarter of 1998 along with fewer farmland transfers, although values were up 4 percent from a year earlier. The Kansas City district experienced a third-quarter decline of 1.3 percent, but values were up from a year earlier (ranchland 6.0 percent, irrigated cropland 4.3 percent, and nonirrigated cropland 3.9 percent). Farmland values in Iowa posted the first year-over-year decrease since 1986, falling an average of \$39 per acre or 1.9 percent from 1997 as reported in a statewide survey conducted by Iowa State University. Lower prices for key farm commodities and uncertainties about the duration of this downturn apparently are having an impact and should mute farm real estate credit demand.

It is unclear, however, if the recent farmland value increases have led to corresponding increases in the demand for farm mortgage credit even in the most favorable years. There are reports that a significant portion of the price gains were driven by outside nonfarm investors and not by farmers. Moreover, there are reports that a good share of the farmer buyers were larger operators who were able to pay in large part or in whole with cash and not via borrowing. The farmland market historically has been thin with only 2-4 percent of the land changing hands in any one year. Today, wide areas are subject to urban pressures that tend to override the true farmland value demand driven primarily by the land's value in agricultural use.

## **Farm Lenders Address the Farm Sector's Credit Supply Challenges**

*All farm lender categories work to furnish adequate credit access and credit funds.*

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### ***Farm Lenders Begin To Show Some Caution***

Low prices for several key agricultural commodities and significant weather problems in several regions have created concerns among farmers and their lenders about the ability of some farmers to repay new or existing loans. Farm organizations have asked lenders to exercise forbearance in dealing with loan customers. The American Bankers Association has formed a Task Force on 21st Century Banking to address concerns, and other lender groups have parallel activities underway. Many of the concerns have focused on farmers' ability to obtain and retain production credit. What is clear is the current credit supply situation varies considerably by region, commodity, farm size, and farm type and that lenders will be dealing with increased internal variation in farm sector economic performance.

Lenders have grown more cautious in extending agricultural credit. The current situation does not merit the label of crisis, but the farm loan portfolio losses of the early to mid-1980's are a recent memory (app. table 6). Lenders were able to manage most 1998 farm loan repayment problems given the relatively healthy recent farm incomes and the additional Federal financial assistance. It is not expected that the 1999 farm financial situation will lead to unmanageable deterioration in lenders' portfolios. But, if the conditions that materialized in the agricultural sector in 1998 persist, lenders increasingly will face renewal requests for substandard loans and new customers that are less creditworthy. In this scenario, some farmers also would need to reconsider and often reformulate their plans to use debt capital. In many ways, 1999 may prove to be a more important year than 1998 in determining the proper course of action for lenders and borrowers. An even larger challenge may loom in the year 2000.

Many lenders operate with a set of credit standards that some producers will not be able to meet under current economic conditions. This situation raises a critical issue--should lenders strictly enforce lending standards, or take some other action to deal with the current problem. While practices vary among lenders, most have credit standards that are tied to various measures of liquidity, solvency, profitability, cash flows or repayment capacity, and collateral values relative to the amount of the loan. Current economic conditions are likely to affect some credit standards more than others.

Lenders, for example, commonly look at cash flows or repayment capacity to judge the viability of loan repayment. Cash flow measures can be very deceptive. Farmers experiencing financial stress can generate cash by selling inventories, allowing accounts payable to build, or taking government payments early. Each of these actions will increase cash inflows, but will not generate an increase in earnings needed to support existing or new loans. Many

lenders have moved to improved measures of "repayment capacity" rather than cash flow alone to assess the ability of farmers to handle a given level of debt. Repayment capacity relies on accrual rather than cash-based measures of income and reflects depreciation and asset replacement cost, living withdrawals, and other sources of income available to service debt.

Lenders are deciding how to deal with deteriorating credit quality. If policies are too stringent, farmers experiencing financial problems may be forced out of business due to a lack of credit. But if policies are too liberal, lenders will endure mounting credit losses, creating problems for themselves and the viable customers in their portfolio. In this environment, lenders need to consider various strategies for dealing with the problem.

The appropriate response to a borrower experiencing repayment difficulties may also differ significantly by type of lender. For example, specialized lenders like the FCS rely on agricultural loans for the bulk of their business. It may not be feasible for them to maintain a portfolio with a significant percentage of problem agricultural loans. Commercial banks, in contrast, tend to have more diversified portfolios. If farm loans are a small portion of the total loan portfolio, a commercial bank may be able to maintain a higher percentage of problem agricultural loans without jeopardizing the capital position of the bank. Input suppliers with vendor finance operations may be able to eliminate the lending relationship without losing the ability to sell product to the customer. Alternatively, the input supplier may be able to subsidize the lending relationship if there is sufficient profit on the sale of products.

The farm sector is dealing with a considerably different lending sector that has evolved in recent years. Much consolidation, streamlining of procedures, and improved oversight has occurred over the past two decades. For example, in 1983 during the farm financial crisis there were 14,427 commercial banks, but by 1998 these had declined 38.6 percent to 8,857. FCS associations declined 78.4 percent, from 895 to 193, during the same span. The new, larger lending firms tend to be more professional in their loan making activities and require better criteria than 20 years ago. Larger lending firms also have a greater utilization of information technology, stricter verification of information, separation of the appraisal and loan analysis functions, and more frequent use of borrower accrual financial statements. The loan evaluation process has become more standardized among different types of lenders, with increasing attention on risk factors. Fewer and larger commercial banks now hold a larger percentage of agricultural loans. Commercial banks have become more important to agriculture in recent decades, but agriculture has become less important to banks.

Two farm lender lessons from the 1980's are: (1) credit cannot be used as a replacement for lost earnings, and (2) lenders will insist on earnings, not asset inflation, to assure repayment. The 1980's made it clear that farm businesses need to be profitable to successfully manage debt obligations. This was a hard-earned lesson. Today, despite low prices, lenders appear confident about the bulk of their farm customers. Most farmers took a lesson from the last farm crisis and are not as heavily leveraged as they were a decade ago. Veteran lenders cite significant differences from the 1980's, including lower interest rates, more owner equity, better credit analysis and monitoring methods, and the better management ability of their producer customers. Lenders thus will work with most of their customers to restructure debt and will continue to provide credit for operating expenses.

Lender regulators insist that stricter safety and soundness guidelines be followed. The farm financial crisis of the 1980's changed the agricultural lending environment. A general enhancement of loan oversight resulted with tighter regulation for all types of agricultural lenders. The farm loan process changed (tightened) as lenders shifted from equity- to income-based lending. The application procedures became more complex. The lending game continues to change due to the emphasis on risk, and the ongoing changes are adding to the pressure on producers. Examiners currently see few problems with underwriting practices for agricultural loans. They do, however, continue to monitor the extent to which banks' agricultural loan portfolios are tied to major crops affected by the Federal Agricultural Improvement and Reform Act of 1996 and other factors.

### ***Farm Lenders Have Adequate Capacity To Supply Credit***

Without credit, agriculture, like most businesses, cannot exist in the high-technology form necessary for American producers to compete in global markets. Currently, the availability of funds is not the problem. In terms of the total supply of credit available to agriculture, lenders currently have more money available than they can profitably lend. It is clear that what borrowers may consider to be a credit crunch in agriculture has been caused more by changes in the loan process and loan analysis than by changes in the availability of funds. Also, these changes have been influenced by changes in the current risk environment surrounding agricultural credit.

Agricultural lenders are expected to go the extra mile to lend to farmers for 1999 production, but they will be looking closely at the profit margin of the farmers' operations. Credit will not be used to replace earnings. If a borrower is not showing a profit in 1999, chances are the bank will not lend him money in 2000. The borrower's ability to generate income is the key. But lenders appear to have enough money to lend.

Farm lenders have responded to the increased demand for loans that began in 1993. At yearend 1992-98 total farm debt grew \$31.3 billion or 22.5 percent. Commercial banks led with \$18.2 billion followed by the individuals and others category with \$9.0 billion, and the FCS with \$8.2 billion.

The increased demand for farm loans during 1992-98 affected the category of nonreal estate farm production loans much more than the real estate mortgage loan category. The former rose 30.1 percent while the latter increased 16.1 percent. Total farm business debt is forecast to be about \$169 billion by yearend 1999, down 0.7 percent and ending a 6-year increase.

The FCS is well positioned to supply farmers' future credit needs. It has demonstrated financial strength in recent years as it underwent massive restructuring of its organization and procedures. The FCS has access to national money markets and can provide needed farm credit at competitive rates. In 1999 FCS farm business debt is forecast to decrease about 2.2 percent, following a rise of 3.8 percent in 1998. FCS gained farm loan market share over the past 4 years after a gradual loss of share the previous 12 years. FCS mortgage debt is expected to decline 1.7 percent in 1999 and FCS nonreal estate loans are forecast to decline about 3 percent.

The recent growth in farm loan demand experienced by commercial banks is reflected in their loan-to-deposit ratios. Average loan-to-deposit ratios grew to 72.5 percent for agricultural banks in the year ending September 30, 1998, from 57 percent 6 years earlier. Average loan-to-deposit ratios reported by the Federal Reserve System for agricultural banks increased during the year ending September 30, 1998, for seven of the eight reporting Federal Reserve districts. The changes from September 1992 to September 1998 for the eight districts are: Atlanta (63.9 to 74.2 percent), Chicago (59.7 to 75.7), Cleveland (67 to 80.6), Dallas (45.5 to 54.9), Kansas City (53.9 to 72.0), Minneapolis (61.1 to 76.9), San Francisco (72.8 to 69.3), and St. Louis (60.8 to 73.3).

The growing demand for farm loans and increasing farm loan-to-deposit ratios at agricultural banks might be expected to have taken much of the slack out of the lending system regarding farm loans. But this has not generally been the case. High loan-to-deposit ratios do not necessarily constrain the origination of new loans. Commercial banks have many nondeposit sources of funds, such as the Federal Home Loan Bank System, and profitable, well-managed banks often have very high loan-to-deposit ratios.

Although rural banks make considerably less use of nondeposit funds than banks headquartered in metropolitan areas, most rural banking markets are served by banks that use nonlocal sources of funds to some extent. Overall, adequate funds are available from banks for agricultural loans, with few banks reporting a shortage of loanable funds.

The availability of direct FSA loans to family-sized farmers unable to obtain credit elsewhere continues to be considerably less than the availability of guaranteed loans. FSA began to emphasize guaranteed in favor of direct government loans in the early 1980's. FSA held only 4.8 percent of all farm business debt in 1998, down from 16.3 percent in 1987, and its current \$8.2-billion loan portfolio should continue to decline for the foreseeable future.

FSA's authority to guarantee loans made by commercial and cooperative lenders is up 13.4 percent in fiscal 1999. Loan

guarantees totaling \$1.44 billion were issued in fiscal 1998, down 8.8 percent from fiscal 1997. FSA authority to issue direct loans (ownership, operating, and emergency) is up 27.4 percent for fiscal 1999. FSA loan activity in 1999 is difficult to predict because it depends in part on the extent of adverse weather as well as on economic conditions that affect the farm sector. FSA will use all of its loan serving authorities, including debt rescheduling and forgiveness, to assist needy farmers. Lenders who make guaranteed loans will be informed about options and they can reschedule and write down debt. Also, Small Business Administration guaranteed farm business loans have increased in recent years, somewhat lessening the demand for FSA guaranteed loans.

Among life insurance companies, total farm lending activity was up 2.3 percent in 1998. During 1982-92 total industry farm mortgage holdings actually declined in 8 of the 11 years for an overall drop of 27.9 percent. Therefore, it is significant that lending by life insurance companies rose for 6 straight years during 1992-98 for a total increase of 13.2 percent. Life insurance companies report adequate funds for the deals that meet their quality standards. Their farm lending is forecast to decline 4.8 percent in 1999.

The general financial health of agriculture today is stronger than it was in the mid-1980's when the sector last experienced significant financial stress. Customers, in general, are less leveraged and more liquid. Those customers who survived the 1980's are better financial managers. Clearly, however, agricultural lending is embarking on an era of increased uncertainty that translates into more stress for specific portfolio segments. Many of the contributing factors are beyond the control of individual

customers and lenders. Furthermore, these factors, such as weakened worldwide demand, will not go away anytime soon.

### ***FCS Market Share Holds***

While the supply of for farm credit use has risen during most of the 1990's, substantial changes have occurred in the market shares of farm business debt among the four classes of traditional farm lenders. The composition of loans made by each class has also changed. It is important to note the interplay between two key lender classes, commercial banks and the FCS, which together held 66.8 percent of farm debt at yearend 1998. Commercial banks have consistently (with the single exception of a slight dip in 1996) raised their share of total farm loans from 21.3 percent in 1981 to 41 percent in 1998. Much of this shift occurred at the expense of the FCS, whose market share dropped from a high of 34 percent in 1982 to 24.4 percent in 1994, before increasing to 25.8 percent in 1998.

Commercial banks' total farm loan portfolio grew 66.9 percent during 1982-98, while the FCS portfolio dropped 44.8 percent from a 1982 high to a 1993 low, before increasing 23.8 percent in 1993-98. The farm financial crisis of the early 1980's adversely affected the FCS, causing many farmer borrowers to leave, fearing they could lose their stock in failed FCS units. Commercial banks also experienced financial stress but were able to compete effectively in the crisis's aftermath to build market share. During 1994-98, FCS farm lending grew 22.8 percent (\$8.2 billion) while commercial bank farm loans increased 20.9 percent (\$12.1 billion). Commercial banks accounted for about 60 percent of the estimated \$4.95-billion increase in farm lending in 1998; the FCS for 32.5 percent.

## Farm Credit Conditions Leading to the Agricultural Contraction of the 1980's and Now

by Robert N. Collender<sup>1</sup>

*While agricultural conditions in the last decade have in some ways been similar to those contributing to the boom and bust cycle of the 1970's and 1980's, important differences exist. Among the similarities are the role of agricultural exports, the foreign exchange value of the dollar, initially adverse growing conditions and eventual increases in supply, and sustained increases in farm asset values and farm indebtedness. Important differences include the role of interest rates and inflation, more conservative use of leverage in recent years, and the more limited duration and amplitude of the recent up-cycle. Several factors could still aggravate the current down-cycle, including some loss of off-farm opportunities, weather, foreign financial crises in importing countries and other exporting countries, and the unknown degree to which lenders may choose to reduce their exposure to even creditworthy agricultural borrowers.*

### Introduction

The recent deterioration in many commodity prices following several years of healthy gains in farmland values and debt levels has led to speculation that agriculture could be entering a period of crisis similar to that of the 1980's. Prices for many key agricultural commodities (especially grains, oilseeds, and hogs) have fallen dramatically over the past 2 years. Preliminary 1998 net farm income is lower than for 4 of the last 5 years and is forecast to deteriorate further in 1999. Some have characterized the anticipated crisis as a "credit crisis," because lenders may balk at extending loans to agricultural borrowers who cannot demonstrate solid repayment ability or profitability. The degree to which low incomes create financial hardship depends on the initial financial strength of the farm, how far income falls, and for how long it remains low.

This article begins by exploring the similarities and differences between credit conditions during the early 1980's and those currently facing agricultural borrowers by assessing such factors as the financial health of borrowers, the financial strength of lenders, and the overall economic environment. Subsequent sections review the conditions that helped spawn the 1980's crisis for production agriculture and for major agricultural lenders. This review concentrates on the average indicators of financial performance of farmers and lenders. For information about the current distribution of distress among farm borrowers see the following article, "Who Holds Operator Farm Debt?" by James T. Ryan and Steven R. Koenig.

### A Review: 1970's Boom, Perverse Economic Incentives Led to 1980's Bust

*The Boom.* Commodity prices surged from 1973 through 1975 and remained high through 1979 (fig. A-1). During this period, farm incomes (fig. A-2) and returns on assets from current income and from real capital gains (fig. A-3) were unusually large. The surge has been attributed to a

variety of factors including a major change in the foreign exchange regime (in 1972 the United States abandoned the fixed exchange rate regime that had been in place since the end of World War II) accompanied by a devaluation of the dollar (fig. A-4), adverse weather in competing production regions, and increases in effective demand for agricultural products abroad (fig. A-5). The increase in farm income, readily available credit (fig. A-6), rising inflation, and low to negative real interest rates (fig. A-7) led to booms in farmland values (fig. A-8) and farm investment in machinery and equipment (fig. A-9).

The strength of the farm economy encouraged expansion and supported rising land values, but so did economic forces beyond the farm sector. Rising inflation and relatively low nominal interest rates supported increases in farmland values and in farm indebtedness. While financial assets lose value with inflation, real assets gain value because they act as a hedge against a fall in the value of currency. This fact encourages investors to shift their holdings from financial to real assets, exacerbating the value loss for financial assets and increasing the financial gain for real assets, including farmland.

In addition, low real interest rates (nominal interest rates less the rate of inflation) encouraged debt financing, since debt could be repaid in cheaper, inflated dollars as it came due. As shown in fig. A-7, real interest rates were low or negative during much of the 1970's. From the beginning of the boom in 1973 through the peak in land values in 1981, farm debt rose 15 percent faster than assets. Of course, the increase in asset values was widely dispersed, but the increase in indebtedness was concentrated among those farmers who were financing new purchases of land or equipment. During the boom years, established farmers had little trouble getting loans and few farm loans were adversely classified by lenders. Farmers had strong equity, rising incomes, and increasing collateral values to offer lenders. In the event of default, lenders expected to recover

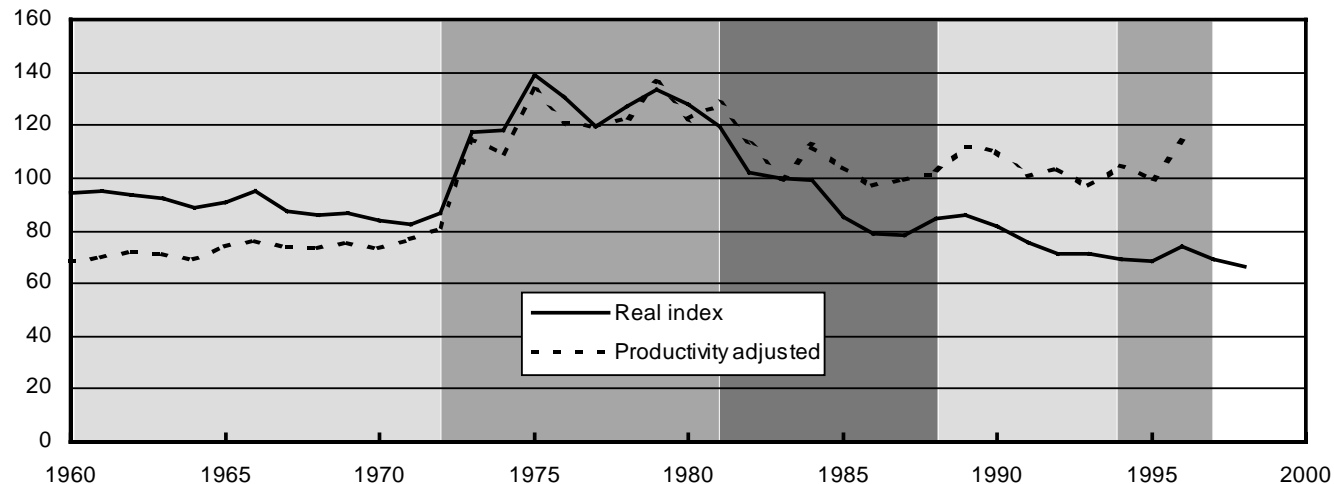
<sup>1</sup> Senior Financial Economist, Finance Team, Rural Business and Development Policy Branch, Food and Rural Economics Division, Economic Research Service.



Figure A-1

**Index of real prices received, 1983=100**

Index



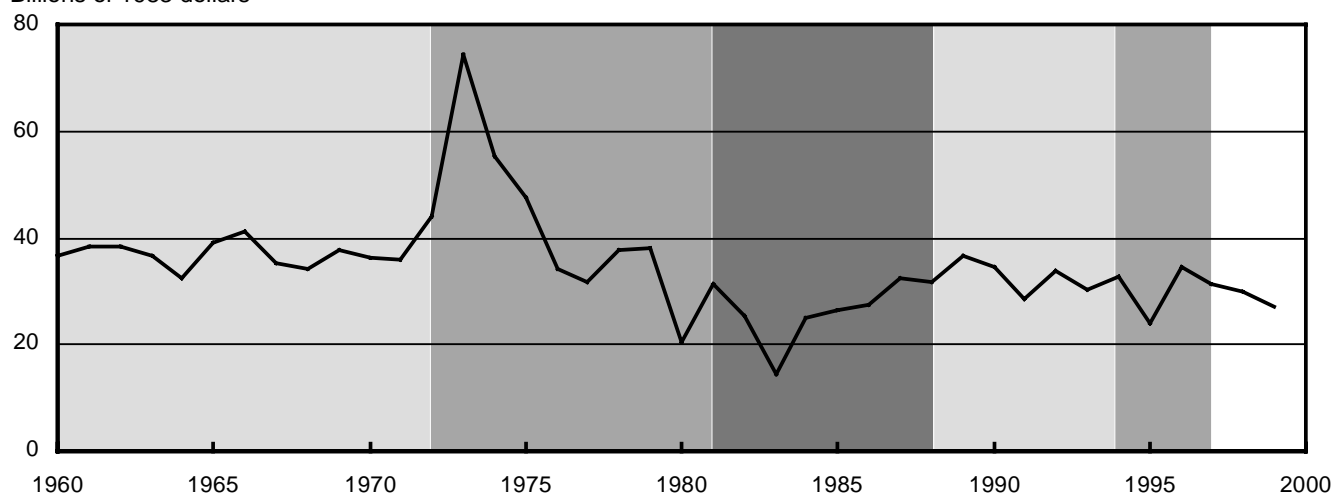
Productivity data not available after 1996.

Source: National Agricultural Statistical Service and Economic Research Service, USDA.

Figure A-2

**Real net farm income, 1960-1999**

Billions of 1983 dollars



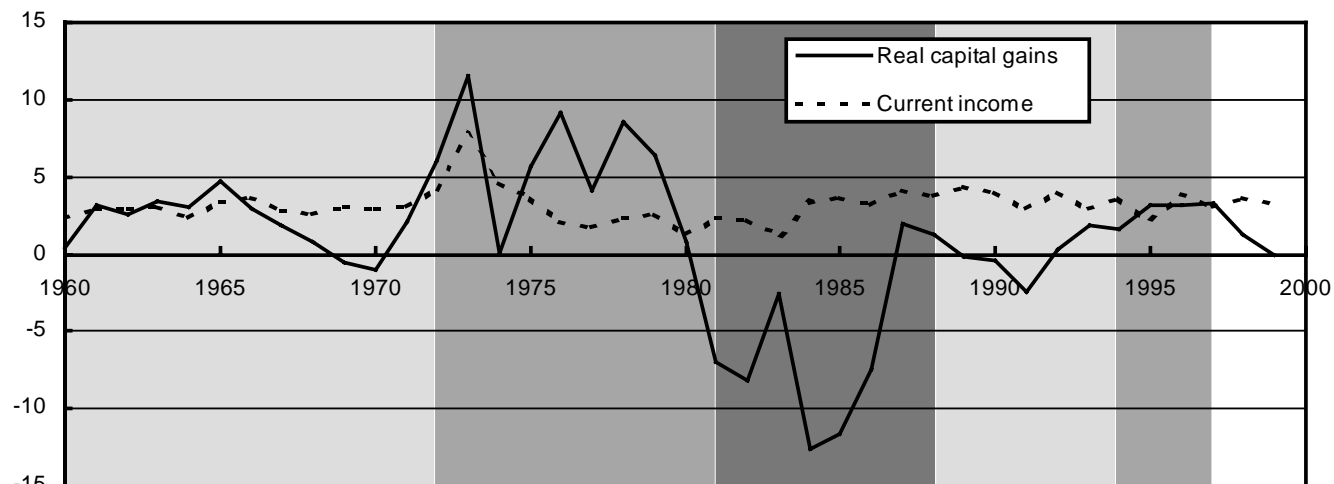
Observations for 1998 and 1999 are forecasts.

Source: Economic Research Service, USDA.

Figure A-3

**Rate of return on assets in farming, 1960-1999**

Percent



Observations for 1998 and 1999 are forecasts.

Source: Economic Research Service, USDA.



Relative stability



Good times



Bad times

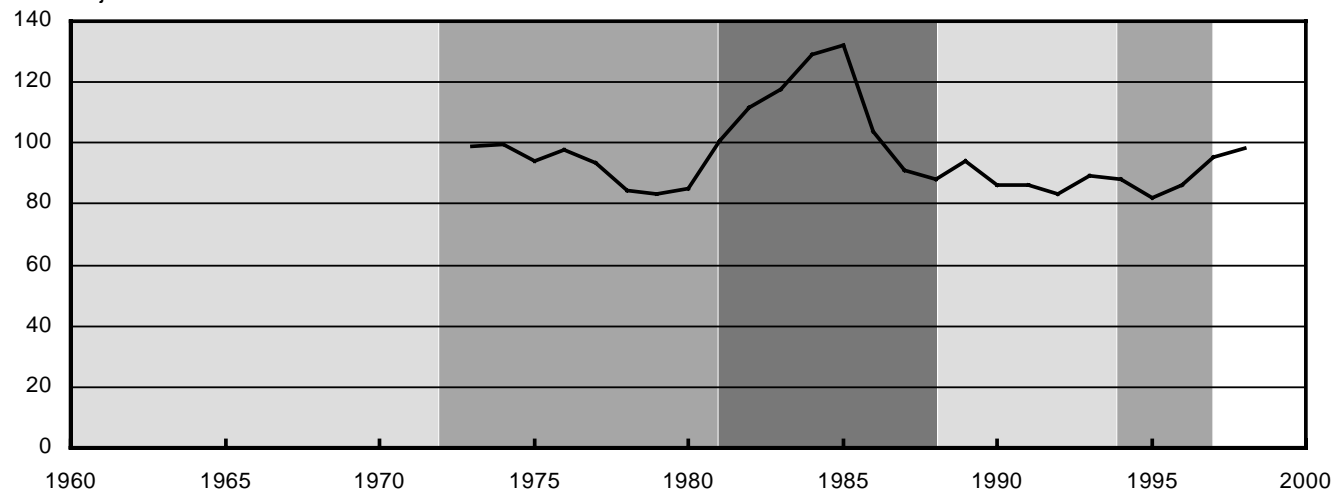


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Figure A-4

# **Real trade weighted value of the U.S. dollar, 1973-1998, March 1973=100**

Price-adjusted index

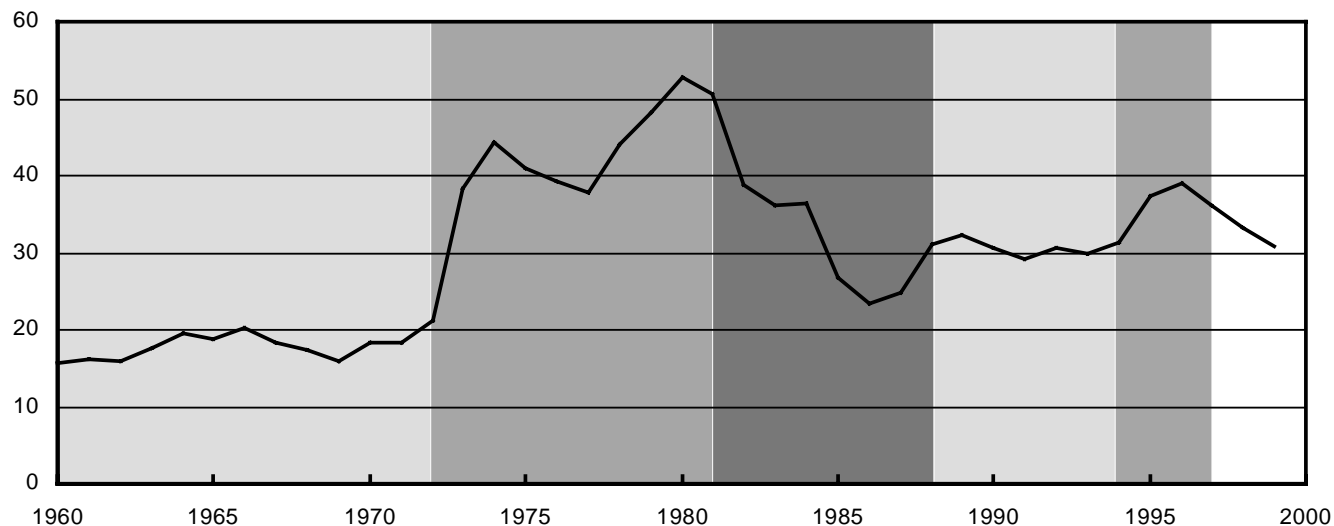


Source: *Economic Report of the President*, February 1998.

Figure A-5

# **Real agricultural exports, 1960-1999**

Billions of 1983 dollars



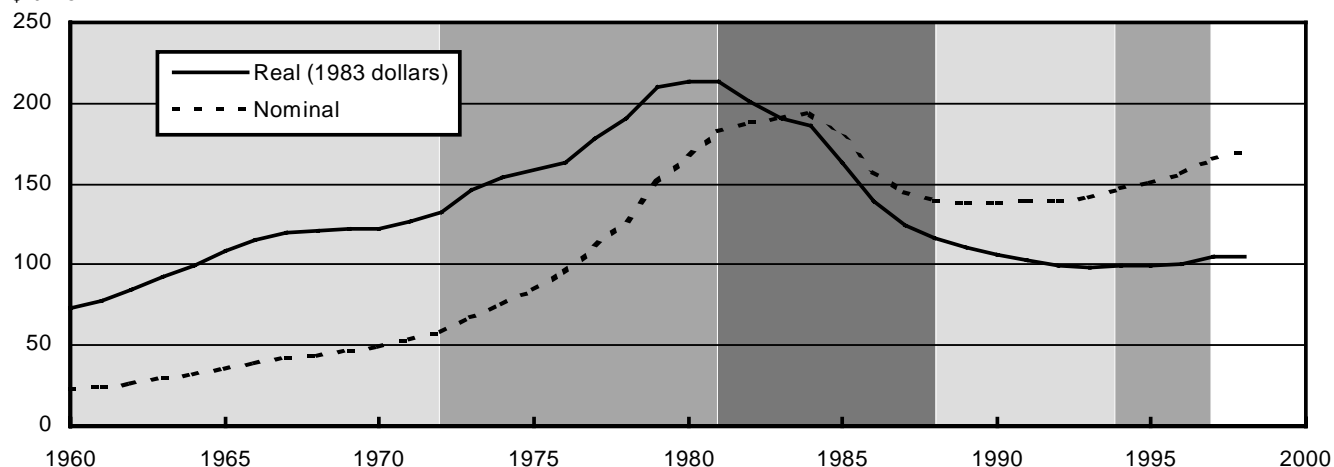
Observations for 1998 and 1999 are forecasts.

Source: Economic Research Service, USDA.

Figure A-6

# **Nominal and real farm debt, 1960-1998**

\$ billion



Observation for 1998 is preliminary.

Source: Economic Research Service, USDA.

Relative stability

Good times

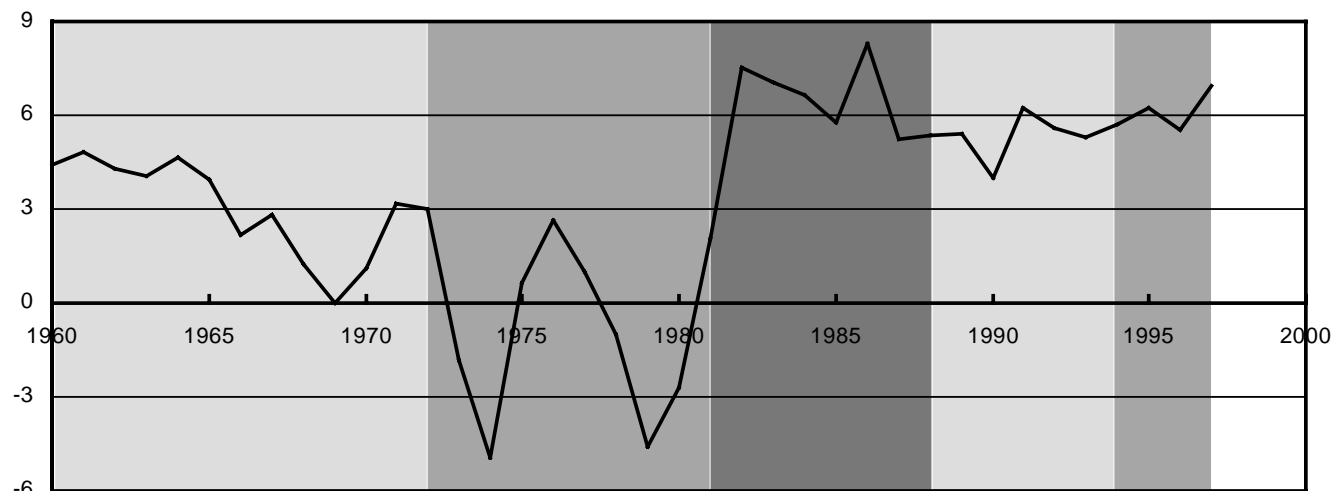
Bad times

Unknown

Figure A-7

**Real average agricultural interest rates, 1960-1997**

Percent

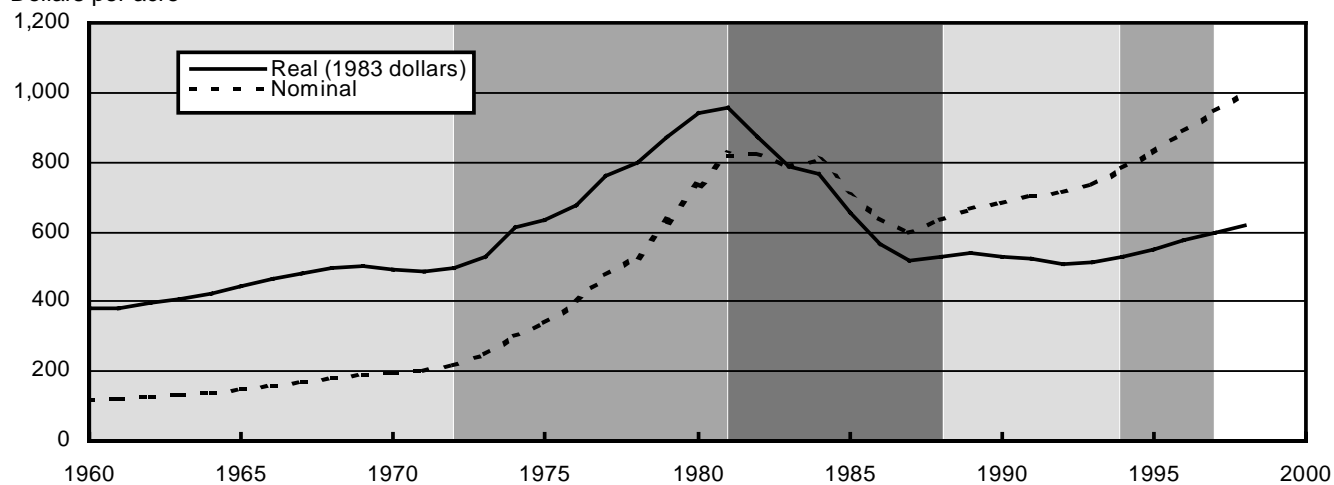


Source: Economic Research Service, USDA.

Figure A-8

**Real and nominal farmland values, 1960-1998**

Dollars per acre



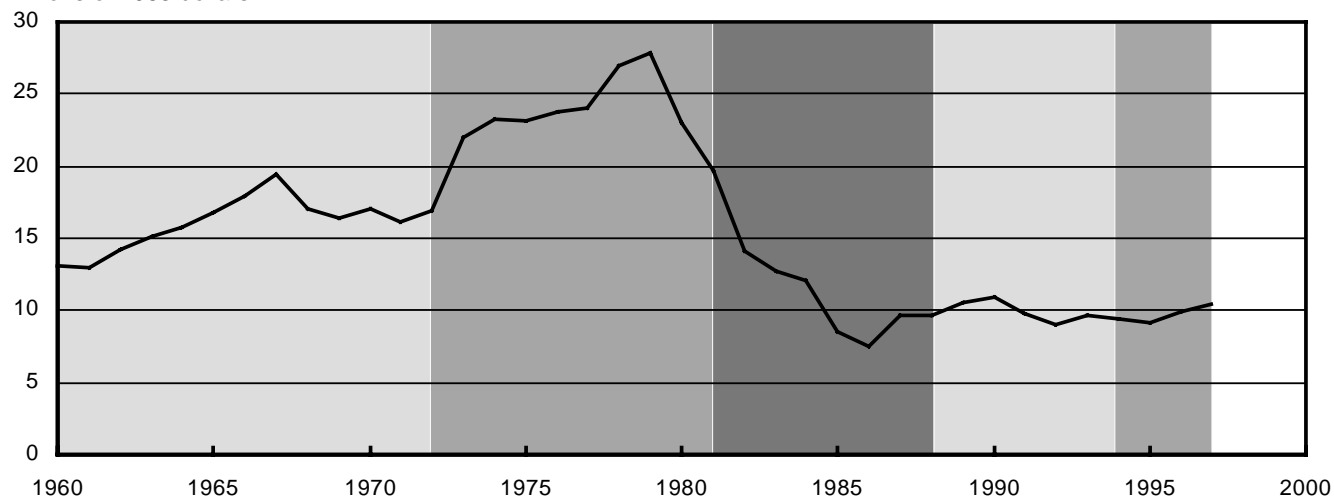
Observations for 1998 and 1999 are forecasts.

Source: Economic Research Service, USDA.

Figure A-9

**Real gross investment in farm machinery and equipment, 1960-1997**

Billions of 1983 dollars



Note: Does not include repairs.

Source: Economic Research Service, USDA.

Relative stability

Good times

Bad times

Unknown

both the balance due and all foreclosure costs (Peoples et al., 1992).

*The Bust.* By the end of 1970's, concern was rising about declining farm liquidity and exposure to cash flow or interest rate shocks. This vulnerability is illustrated by the increase in interest and principal payments from roughly 16 percent of gross cash income in the early 1970's to 24 percent by 1979. Farmers, lenders, and economists were slow to realize the extent of needed adjustments, with many arguing that the contraction would be short and would involve shifting income from asset accumulation to debt service, while asset values remained sound.

By the early 1980's, many of the factors that spurred the boom were reversing: export demand and commodity prices fell, while many input prices, interest rates, and the value of the dollar rose. The nature of the boom made U.S. agriculture vulnerable to a downturn: many farmers who had bought land or made other long-term investments--especially those who used debt financing--now had difficulty meeting their other financial obligations or even making a living. Farmers had responded strongly to the perceived profit opportunities from increased production by bringing more land under cultivation and by investing in productivity increasing technologies. These investments led to large increases in acres planted and in per acre yields for many commodities.

Government policies during the 1970's amplified the supply response. Many governments, worried about foreign exchange or food security issues, increased their support for agricultural production. Federal commodity programs encouraged increased production and indirectly encouraged increased farm borrowing. By setting price floors, commodity programs reduced the risk associated with farm income, making farm income a more attractive repayment source for supporting debt. Support levels increased during the boom period when raising them involved no immediate increase in Federal budget expenditures, further supporting incomes and borrowing.

Government credit policy also played a role in the boom. Under the Farmers Home Administration's lending programs, over \$34 billion in subsidized credit was delivered in the six years from 1975 through 1981. This subsidy was reflected in the value of farmland. Much of the money was lent through the emergency loan program, which had no meaningful eligibility tests. These loans were often used by many marginal borrowers to make payments on commercial short-term loans which, in turn, were used to make payments on real estate loans. Thus, people stayed in farming who otherwise would have left in a more orderly fashion. Others were encouraged to expand and or enter farming by the easy availability of government subsidized credit.

Following inflation-fighting policy decisions by the Federal Reserve Board starting in 1979, nominal interest rates rose sharply in 1980, peaked in 1981, and remained high for several years (fig. A-7). These high interest rates made dollar-denominated investments attractive and caused the foreign exchange value of the dollar to appreciate. The monetary tightening successfully curtailed the double-digit

inflation of the late seventies--inflation peaked in 1980 and fell below 2 percent by 1986. However, the high value of the dollar and high price floors for program commodities hurt the international competitiveness of U.S. agriculture and pressured farm incomes. The fall in real farm income and rise in real interest rates reversed the economic environment that had made debt-financed investment in real assets like farmland attractive, delivering a double whammy to heavily indebted farmers. Because the value of capital assets is directly related to the cash flows they generate and inversely related to interest rates, falling incomes and rising rates pressured farm asset values, which fell dramatically from 1981 through 1986.

### **Stress Among Lenders**

An important factor in the agricultural boom and bust was the behavior of agricultural lenders and their regulators. This behavior arguably accentuated the boom and aggravated the decline. In its history of the 1980's, the Federal Deposit Insurance Corporation (FDIC) identifies four recessions by region or sector, including the one in agriculture, as the immediate cause of most bank failures (Federal Deposit Insurance Corporation, 1997). Banks were vulnerable to these recessions because they tended to serve relatively narrow geographic markets, but not all regional recessions caused failures. The FDIC found that, generally, failures were associated with recessions in sectors that had experienced a fairly sustained expansion and had grown faster than the national economy. Agriculture was such a sector. Credit helped fuel the boom, but when the down-cycle hit, some borrowers inevitably defaulted, weakening lenders. In contrast, recessions that were preceded by slow growth (such as in the rust belt) did not lead to many failures. Recessions that caused problems for lenders were similar in that each followed a period of rapid expansion, speculative activity (usually supported by expert opinions) that contributed to the run-up in asset values, and wide swings in real estate activity that contributed to the severity of downturns.

Lenders who found themselves in trouble had generally not been in a seriously weak condition in the years preceding the recessions. Lenders who failed generally assumed greater risks than the survivors, as measured by ratios of total loans and non-residential real estate loans to total assets. But only a small fraction of lenders with high-risk exposures failed. Mitigating factors included strong equity and reserve positions, more favorable risk/return tradeoffs, superior lending and risk management skills, and proactive changes in policies regarding risk before losses became severe. Lenders that relaxed credit standards entered markets where management lacked expertise, made large loans to single borrowers, or whose loan growth strained their internal control systems or back-office operations were most likely to fail.

The greater the exposure of lenders to agriculture, the more trouble defaulting farm loans caused. Life insurance companies and large banks were least affected because of the relatively small share of their assets related to agriculture. Even many rural banks were adequately diversified: while 328 of 5,000 agricultural banks existing in 1981 failed in the next 10 years, on average, return on equity

for agricultural banks never fell below 5 percent, and capital-to-asset ratios improved over the decade, even though they were already higher, on average, than at other banks (Peoples et al., 1992). Farm Credit System (FCS) lenders faced greater challenges because their loan portfolios were not diversified either by geography or by industry, and because of organizational and operating inefficiencies (Collender and Erickson, 1996).

The roots of the banking, thrift, and FCS crises were in the 1970's, like those of the agricultural crisis. Increased instability in banking, as in agriculture, arose from the change in the exchange rate regime, rising inflation, volatile nominal interest rates, and anti-inflationary Federal Reserve Board monetary policies. And as in agriculture, there were few obvious signs of trouble for lenders in 1980. At small banks (those with less than \$100 million in assets) and FCS institutions, returns on assets and returns on equity were good, equity-to-asset ratios were improving, and loan charge-offs were low.

### ***Parallel of Current Conditions to Early 1980's Is Limited***

Some experiences of the past few years are astonishingly similar to the agricultural cycle of the 1970's and 1980's, while other aspects are very different. The similarities start with the nature of the more recent up-cycle. It followed the earlier pattern of rising agricultural exports during a period of tight stocks due to production controls and unusually bad weather in many growing areas worldwide. This combination led to high prices and optimism about future income from farming, which, along with falling interest rates, supported farmland price increases. Recent increases in farm indebtedness add to the sense of *deja vu*. The beginning of the down-cycle has further parallels: policies that imposed supply controls on agricultural production have been relaxed, foreign demand has diminished in the face of

financial crises that started in Asia, the dollar has appreciated relative to other currencies, and the carryover stocks of grains and oilseeds are increasing.

Despite the similarities, many factors are substantially different. In contrast to the early 1980's, the farm sector and its lenders are much less vulnerable to economic instability, and the domestic economic environment is much more stable. Farmers and farm lenders have used leverage more conservatively in the last few years than they did in the 1970's. Off-farm income has been an important alternative source of farm repayment capacity for many years (Harrington, et al., pp. 49-54). Because overall economic growth has remained strong and unemployment in most parts of the country is low, off-farm opportunities are better in many parts of the country than during the years of stagflation and recession of the late 1970's and early 1980's.

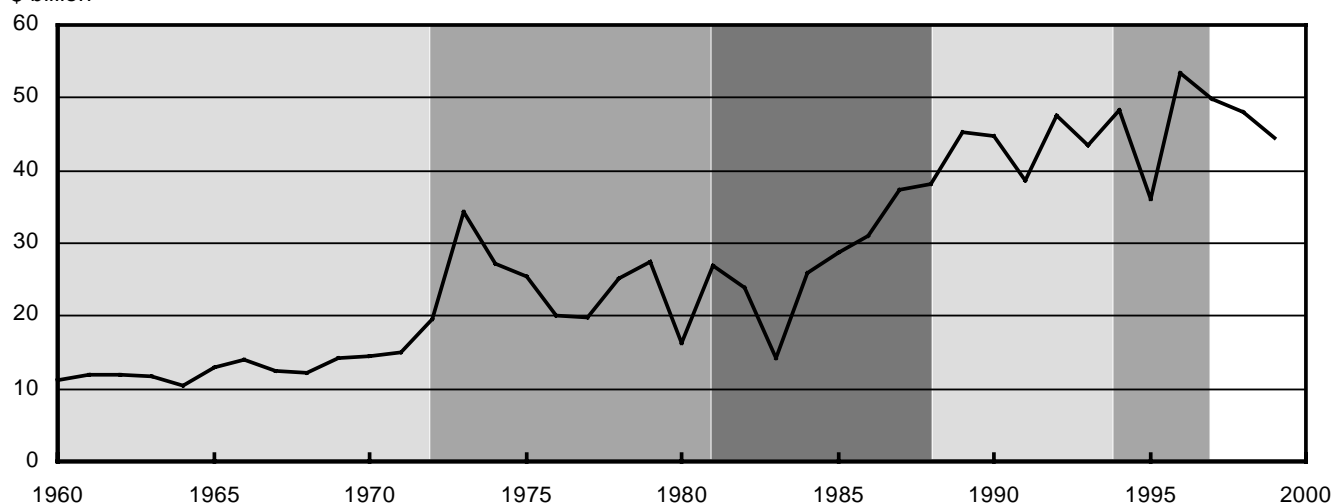
While indicators of farm sector financial strength have deteriorated, the current situation differs from that of the early 1980's in a very important way. The monetary tightening by the Federal Reserve Board and the vulnerability of farmers and lenders to interest rate changes were defining characteristics of the 1980's crises. While interest payments and principal payments consumed 22 percent of gross cash income in 1979 rising to 28 percent by 1983, they currently consume only 14 percent. And, while low commodity prices and farm incomes create concerns about loan repayment ability, low nominal interest rates have continued to support asset values, including farmland, rather than pressuring them. The farm sector and farm lenders are much less vulnerable to increases in nominal interest rates and because inflation is low, any such increases are likely to be small compared with those of the 1980's.

Both the duration and amplitude of the recent up-cycle are compressed compared with that of the 1970's. Nominal net farm income rose 30 percent in 1972 and 77 percent in 1973

Figure A-10

### **Nominal net farm income, 1960-1999**

\$ billion



Observations for 1998 and 1999 are forecasts.

Source: Economic Research Service, USDA.

after a long period of stability (fig. A-10). Over the next 5 years real net farm income averaged 16 percent higher than during the 5 years before the 1972 increase. In 1996, net farm income rose 48 percent from 1995, but 24 percent over the average of the previous 5 years, and this increase is not expected to be sustained for even a few years. Growth of real debt and growth in land values, while supported by a similar combination of factors, have not compared in magnitude (figs. A-5 and A-8) to that of the 1970's. Much less of the recent increase in farm assets has been debt financed. From 1990 to 1998 nominal farm assets increased 34 percent, while nominal farm debt has increased 23 percent. In contrast, debt increased 4 percent faster than assets from 1972 to 1979 and 15 percent faster from 1972 through 1981.

Advice from farm financial experts has also been more temperate in the 1990's than in the 1970's. Both farm economists and financial regulators have consistently warned that liquidity from "Freedom to Farm" payments would support higher land prices initially, but had potential to fall as these front-end loaded payments tapered off. In contrast, experts in the 1970's and early 1980's encouraged farmers to expand production and increase debt loads.

Farm lenders as a group are less vulnerable to downturns in the sector than they were in the 1980's. Consolidation and financial innovations (including securitization, third party guarantees, options, and swaps) have enabled many lenders to reduce their risk exposure to local economic conditions and interest rates changes. Lenders are also subject to closer scrutiny now from their Federal regulators. Regulatory changes, including risk-based capital standards, risk-based insurance premiums, and prompt corrective action, make it more costly to lenders to allow credit quality in their loan portfolios to deteriorate. Many lenders have higher capital ratios, better quality capital, and better internal controls than during the 1970's and 1980's.

#### **While Current Conditions Do Not Match Those of the 1980's, Further Deterioration Is Possible**

Many of the events and conditions supporting recent gains in farm income and asset values parallel events and conditions that occurred in the boom years of the 1970's. Also, many of the conditions that led to the dramatic fall in many commodity prices during 1998 are similar to those that produced agriculture's contraction in the 1980's. Nonetheless, important differences exist that point to a sector better able to withstand adversity and less likely to be as dramatically tested. Greater domestic economic stability, a less pronounced expansion, and more conservative use of leverage by farmers and their lenders all should reduce the magnitude of any contraction.

That said, two other observations bear further discussion: First, individual experience varies more than sector averages, and many farmers and farm lenders will certainly face financial stress and difficult decisions. This is the theme of the next article. Second, a number of factors could aggravate the current downturn. For example, some lucrative and traditional off-farm employment opportunities may disappear, especially in energy producing States. Changes in government policies could strengthen the dollar or encourage greater agricultural production. Favorable weather here or abroad could increase price pressure on major commodities. Continued demand shocks in food importing countries or weakening of currencies of other agricultural exporters like Canada, Australia, and Brazil could further erode agricultural exports. And, changes among agricultural lenders and their regulators could affect their willingness to lend to creditworthy farmers during a contraction.

These and other factors will determine the duration of the current contraction, which in turn will be a key factor in determining successful strategies for farmers and lenders. A short-lived contraction can be survived by liquidating inventories or delaying capital replacement so as to shift income or accelerate cash flows over time. These techniques tend to increase liquidity problems and dissipate equity if incomes do not improve. A longer-lived contraction, therefore, calls for more aggressive debt reduction and possibly asset liquidation.

#### **References**

1. Collender, Robert, and Audra Erickson, *Farm Credit System Safety and Soundness*, AIB-722. USDA-ERS (January 1996).
2. Federal Deposit Insurance Corporation, *History of the Eighties--Lessons for the Future: An Examination of the Banking Crises of the 1980s and Early 1990s*. Washington, DC. 1997.
3. Harrington, David H., Robert A. Hoppe, R. Neal Peterson, David Banker, and H. Frederick Gale, Jr., "Changes in the Farm Sector," in Duncan, Marvin, and Jerome M. Stam, eds., *Financing Agriculture into the Twenty-first Century*, Westview Press, Boulder, Co. 1998.
4. Peoples, Kenneth, David Freshwater, Gregory Hanson, Paul Prentice, and Eric Thor, *Anatomy of an American Agricultural Credit Crisis: Farm Debt in the 1980s*. Washington, DC. 1992.

## Who Holds Farm Operator Debt?

by James T. Ryan and Steven R. Koenig<sup>1</sup>

*U.S. farm business debt rose 20 percent in the last 5 years, and totaled \$170 billion on December 31, 1998. As subsectors of the farm economy appear to be entering a period of lower profitability, it is important to know how farm debt is distributed among farm operators and their creditors. This analysis examines the concentration of debt among farmers as reported in USDA's 1997 Agricultural Resource Management Survey. These data indicate that over half of all farm operators do not carry debt from year to year, so debt is concentrated among a small number of farms. Within the group of farms that do carry debt, total farm debt is heavily concentrated among large farms and farms with high leverages.*

Total U.S. farm debt rose \$32 billion from the start of the decade to \$170 billion at the end of 1998. Growth of credit for nonreal estate purposes outpaced growth of real estate credit during this decade, and accounted for \$21 billion of the rise in debt. While total farm debt burdens have grown quickly, they remain well below the record \$194 billion reported in 1984.

Banks now supply 41 percent of all farm debt. Debt held by commercial banks has grown almost \$25 billion during the decade—an increase of nearly 56 percent (figure B-1). The Farm Credit System (FCS), the second largest source of credit to farmers, experienced a more modest increase in its farm lending volume, while life insurance company lending remained unchanged and Farm Service Agency (FSA) direct lending volume fell by over half. Because of these trends, a larger share of farm debt is held by banks and the FCS than at any time in recent history. From 1990 to 1998, their combined market share of total farm debt rose from 59 percent to 67 percent. At the peak of farm debt in 1984, their market share was just 58 percent.

This analysis explores the distribution of farm debt among different classes of operators and their creditors. Given the recent rise in farm debt, and prospects that farm income will fall below the levels attained in 1996 and 1997, some deterioration in loan quality is expected to occur in 1999. Data collected in USDA's 1997 Agricultural Resource Management Survey (ARMS) are used to examine farm operator debt burdens at the start of 1998. This analysis applies only to farm operators, and excludes debt owed by contractors and nonoperator landlords. Farm business debt in the USDA farm sector accounts stood at \$165 billion at the end of 1997, while farm operators reported \$108 billion in the 1997 ARMS. This research applies to that portion of farm debt that is owed by farm operators. Particular attention is focused on the farm loan portfolios of two of the largest groups of farm lenders—commercial banks and the FCS.

### Many Operators Owe No Debt

Many farms either do not borrow regularly or repay their loans by yearend. Typically, fewer than half of all farms

carries loan balances from one year to the next. ARMS data indicate that only 45 percent of all farm operators reported any outstanding farm debt to a lender at yearend 1997.

For farms carrying loan balances from year to year, credit use varies by the size of the farm operation. Large farms are more likely to owe debt. Nearly 80 percent of farms with at least \$250,000 in gross cash incomes reported debt balances at yearend. Only 34 percent of nonfamily operations and 42 percent of small farms (those with less than \$250,000 in sales) had debt at yearend. Within the small farm group, only 18 percent of farms with a retired operator owed any debt. About 40 percent of all farm operators report a primary occupation other than farming. While fewer than 44 percent of these operators report outstanding debt at yearend, these “residential/lifestyle” farms generally meet debt service requirements from nonfarm income. Farms reporting no debt balances tend to be small in size, with gross cash farm incomes averaging just \$50,000.

### Most Farms Rely on a Primary Lender

Most farms have the majority of their credit needs provided by a single lender or related group of lenders—referred to here as their primary lender. Only about 2 percent of farms with debt do not have a primary lender (table B-1). Commercial banks are the most common primary lender for indebted farm operators. At the end of 1997, banks were the primary lender for 54 percent of all indebted farm operators. The FCS is the primary source of credit for 17 percent of indebted farm operators. The Farm Service Agency and other lenders are primary lenders for a much smaller share of farms reporting debt. With banks and the FCS serving as primary lenders for 71 percent of all farm operators, the policies of these lenders toward their farm customers are very important to overall credit delivery to the sector.

Over 21 percent of all farm debt was owed to the nontraditional lenders included in the individuals and others classification. This group consists of farmland sellers, merchants, dealers, input suppliers, cooperatives, contractors, and others for whom the provision of credit is incidental to the primary transaction. Nonreal estate financing activities of these nontraditional lenders has

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**Table B-1—Distribution of debt by a borrower's primary lender, December 31, 1997 1/**

|  | Farm<br>Credit<br>System | Banks | Farm<br>Service<br>Agency | Individuals<br>and<br>others | No<br>primary<br>lender | All<br>indebted<br>farms 2/ |
|--|--------------------------|-------|---------------------------|------------------------------|-------------------------|-----------------------------|
|  | <i>Percent</i>           |       |                           |                              |                         |                             |
| Share of indebted borrowers<br>borrowing primarily from: | 17.3                     | 54.1  | 5.6                       | 21.1                         | 1.5                     | 100.0                       |
| Share of borrower<br>debt owed to lender:                |                          |       |                           |                              |                         |                             |
| Farm Credit System                                       | 88.7                     | 2.0   | 3.4                       | 2.6                          | 19.6                    | 21.3                        |
| Commercial banks   | 5.6                      | 90.5  | 7.6                       | 7.6                          | 29.3                    | 47.2                        |
| Farm Service Agency                                      | 1.0                      | 1.0   | 84.9                      | 1.1                          | 9.5                     | 5.9                         |
| Individuals and others                                   | 3.7                      | 4.9   | 3.4                       | 87.9                         | 17.2                    | 21.3                        |
| Unspecified lender                                       | 1.0                      | 0.9   | 0.7                       | 0.7                          | 15.0                    | 1.5                         |
| All lenders 2/   | 100.0                    | 100.0 | 100.0                     | 100.0                        | 100.0                   | 100.0                       |

1/ A lender is considered to be the primary lender if more than 50 percent of the borrower's debt is owed to that lender group. 2/ Due to small sample size, data for operations reporting life insurance companies as primary lender are not shown separately, but are included in total.

Source: 1997 Agricultural Resource Management Study, Economic Research Service, USDA.

**Table B-2—Selected financial measures of indebted farms, by debt-to-asset ratio, 1997**

|  | All<br>indebted<br>farms | Debt-to-asset ratio |             |                   |
|--|--------------------------|---------------------|-------------|-------------------|
|  |                          | Less than<br>0.4    | 0.4 to 0.70 | More<br>than 0.70 |
| Number of indebted farms                       | 911,522                  | 719,715             | 139,298     | 52,509            |
| Percent of indebted farms                      | 100.0                    | 79.0                | 15.3        | 5.8               |
| Percent of farm debt                           | 100.0                    | 57.5                | 30.5        | 12.0              |
| Share of the total debt owed to:               |                          | <i>Percent</i>      |             |                   |
| Farm Credit System                             | 100.0                    | 66.6                | 25.5        | 7.9               |
| Commercial banks                               | 100.0                    | 58.3                | 29.6        | 12.1              |
| Farm Service Agency                            | 100.0                    | 42.2                | 40.3        | 17.6              |
| Individuals and others                         | 100.0                    | 55.3                | 32.7        | 12.0              |
| All lenders                                    | 100.0                    | 57.5                | 30.5        | 12.0              |
| Average:                                       |                          |                     |             |                   |
| debt/asset ratio                               | 22.4                     | 15.3                | 50.9        | 95.6              |
| Term debt coverage ratio 1/                    | 2.4                      | 3.1                 | 1.4         | 1.2               |
| Financial measures of<br>borrowers (averages): |                          | <i>Dollars</i>      |             |                   |
| Total assets                                   | 528,409                  | 560,864             | 462,560     | 258,291           |
| Total lender debt                              | 118,159                  | 86,032              | 235,560     | 247,006           |
| Net worth                                      | 410,250                  | 474,832             | 227,000     | 11,285            |
| Gross cash income                              | 119,674                  | 113,042             | 146,725     | 139,511           |
| Net farm income                                | 21,032                   | 23,354              | 13,774      | 8,546             |
| Debt per farm:                                 |                          |                     |             |                   |
| Farm Credit System                             | 25,189                   | 21,237              | 42,057      | 34,599            |
| Commercial banks                               | 55,789                   | 41,191              | 107,996     | 117,341           |
| Farm Service Agency                            | 7,017                    | 3,748               | 18,483      | 21,408            |
| Individuals and others                         | 25,107                   | 17,592              | 53,739      | 52,141            |
| All lenders 2/                                 | 118,159                  | 86,032              | 235,560     | 247,006           |

1/ Term debt coverage ratio = (Net farm income + nonfarm income + depreciation + interest on term debt + interest on capital leases - total income tax expense - family living expense) / (Scheduled principal and interest payments on term debt + scheduled principal and interest payments on capital leases). 2/ Due to small sample size, debt to life insurance companies is not shown separately but is included in the total.

Source: 1997 Agricultural Resource Management Study, Economic Research Service, USDA.



increased in recent years, driven mainly by favorable credit terms offered by machinery manufacturers and input suppliers. Supplier financing may have originated as a means of increasing sales, but corporate divisions providing credit services have developed into important profit centers for the parent organizations. Anecdotal evidence suggests that these units are expanding the range of products offered, as they attempt to become more complete providers of farmers' total needs for operating credit.

Most debt owed by borrowers is owed to their primary lender. For example, on average, 89 percent of the debt owed by a farm borrowing primarily from the FCS is supplied by the FCS. Borrowers for which the FSA is the primary lender received more significant shares of their credit from other sources, primarily commercial banks. Banks typically served as the leading secondary lender for operations reporting other credit sources as their primary lender.

### ***Debt Is Concentrated in Highly Leveraged Farms***

The majority of indebted farms did not carry high debt loads going into 1998. The average debt-to-asset ratio for all indebted farms was 0.22, and 79 percent of indebted farms had debt-to-asset ratios under 0.40. A ratio above 0.40 is considered to be an indicator of potential financial stress. Of the 21 percent of indebted farms with debt-to-asset ratios over .40, only 6 percent had ratios above 0.70 (table B-2). Including the 55 percent of farms that reported no debt at yearend 1997, over 90 percent of all farms had debt-to-asset ratios less than .40.

These numbers can be misleading from a lender's standpoint, since farms with higher debt-to-asset ratios owe much larger amounts of debt. On average, farms with ratios under 0.40 had \$86,000 in total debt, while farms with ratios over 0.70 reported debt exceeding \$247,000. Because of this weighting, 43 percent of total farm operator debt is owed by operations with debt-to-asset ratios over 0.40. Lenders are most concerned with the 12 percent of operator debt that is owed by highly leveraged farms, those with ratios over .70.

Should the farm economy enter an extended period of financial difficulty, part of the debt owed by operators with ratios over .70 is at a high risk of going into default. These highly leveraged farm operations had little solvency cushion, reporting average debt-to-asset ratios of 0.96. While debt is concentrated in these leveraged farms, it is not as concentrated as it was in the mid-1980's. Although not directly comparable to current data because of changes in data methodology, about a third of total farm debt at the end of 1985 was owed by farm operators with debt-to-asset ratios greater than .70 (USDA 1986).

### ***Larger Farms Owe More Debt***

Farm debt is concentrated in larger farm operations. While the average indebted farm operator owed \$118,159 at the end of 1997, large farms with at least \$500,000 in gross cash incomes owed an average of \$571,563. Although these farms account for just 4 percent of all indebted farms, they

owe over 19 percent of all farm operator debt (table B-3). Over a third of all farm operator debt is owed by the largest 11 percent of indebted farm operators. However, these large operations generate sufficient income to service their existing debt obligations, as evidenced by average term debt coverage ratios exceeding 3.5. Nevertheless, an abrupt worsening of the financial well-being of these large scale operators would disproportionately affect the credit quality reported by lenders.

While banks are the most common primary lender and have the greatest market share of total farm debt, their lending is spread among the broadest range of borrowers by type and size of operation. Life insurance companies serve the largest farm operations, while the FSA's direct lending programs tend to serve farms with \$100,00 to \$250,000 in gross cash incomes and limited-resource farmers.

ARMS data have consistently shown that FCS loans are more likely to go to larger farm operations (Koenig and Dodson). The average farmer borrowing primarily from the FCS reported a gross cash income of \$172,617, while the average farmer borrowing primarily from banks had gross cash income of \$107,943 (table B-4). FCS borrowers owed \$144,000 in debt, while the average bank borrower owed \$102,000. Because FCS credit is concentrated in fewer farm operations, the overall quality of its farm loan portfolio will be affected by the financial performance of fewer farm operations than that of the commercial banking industry. This suggests that the more highly concentrated FCS portfolio may carry higher relative risk than the more diversified farm debt portfolio of commercial banks.

### ***FCS Borrowers More Financially Secure***

While FCS debt is more concentrated in larger operations, its borrowers on average tend to be more financially secure than many other indebted farm operators. Indebted farms borrowing primarily from the FCS have higher net worth and somewhat lower leverage ratios than all indebted borrowers. Among the major lender categories, the average debt-to-asset ratio for FCS borrowers is among the lowest at 19.4 percent. FSA borrowers and those with no primary lender are the most leveraged, with average debt-to-asset ratios of 29 percent and 34 percent, respectively.

The FCS had the highest percentage of its debt (two-thirds) owed by lower risk borrowers with debt-to-asset ratios less than 0.40 (table B-2). In contrast, only 42 percent of FSA debt was owed by these lower risk producers. The FCS also had the least amount of its debt owed by farms with leverage ratios greater than 0.70.

Overall financial performance can be assessed by combining measures of solvency and income for individual farm operators. Farms considered vulnerable to failure are those reporting negative net farm incomes and debt-to-asset ratios greater than 0.40. By these criteria, nearly 10 percent of all indebted farms were considered vulnerable to failure at the end of 1997. FSA had the greatest percentage of its primary borrowers classified as vulnerable at 17 percent. FCS borrowers were least likely to be considered vulnerable and more likely to be in the favorable class.

**Table B-3—Selected financial measures by typology of indebted operators, by farm sales volume, 1997**

|                              | Value of sales             |                       |                       |                |               |                 |
|------------------------------|----------------------------|-----------------------|-----------------------|----------------|---------------|-----------------|
|                              | Primary occupation farming |                       |                       |                | All others 1/ | All indebted 2/ |
|                              | Under \$100,000            | \$100,000 - \$250,000 | \$250,000 - \$500,000 | Over \$500,000 |               |                 |
| Number reporting debt        | 222,400                    | 128,926               | 63,115                | 36,460         | 460,459       | 911,361         |
|                              | <i>Percent</i>             |                       |                       |                |               |                 |
| Share reporting debt         | 56.1                       | 72.3                  | 79.7                  | 79.6           | 34.1          | 44.5            |
| Distribution of total:       |                            |                       |                       |                |               |                 |
| Indebted borrowers           | 24.4                       | 14.1                  | 6.9                   | 4.0            | 50.5          | 100.0           |
| Debt                         | 16.6                       | 17.6                  | 14.2                  | 19.4           | 32.2          | 100.0           |
| Share of total debt owed to: |                            |                       |                       |                |               |                 |
| Farm Credit System           | 15.0                       | 19.6                  | 17.4                  | 25.0           | 23.0          | 100.0           |
| Commercial banks             | 16.7                       | 17.4                  | 14.4                  | 19.4           | 32.2          | 100.0           |
| Farm Service Agency 3/       | 29.1                       | 29.9                  | 11.1                  | 8.6            | 21.3          | 100.0           |
| Individuals and others       | 16.9                       | 13.8                  | 11.1                  | 13.1           | 45.2          | 100.0           |
| Unspecified lender           | 6.5                        | 17.7                  | 21.2                  | 39.8           | 14.8          | 100.0           |
| All lenders                  | 16.6                       | 17.6                  | 14.2                  | 19.4           | 32.3          | 100.0           |
| Average debt-to-asset ratio  | 17.8                       | 21.7                  | 23.7                  | 27.4           | 22.7          | 22.4            |
| Term debt coverage ratio 4/  | 1.6                        | 2.7                   | 3.6                   | 4.0            | 1.0           | 2.3             |
|                              | <i>Dollars</i>             |                       |                       |                |               |                 |
| Total assets                 | 449,696                    | 678,010               | 1,023,184             | 2,088,549      | 333,185       | 528,409         |
| Total lender debt            | 80,153                     | 146,886               | 242,773               | 571,563        | 75,491        | 118,159         |
| Net worth                    | 369,543                    | 531,124               | 780,411               | 1,516,986      | 257,694       | 410,250         |
| Gross cash farm income       | 48,543                     | 161,256               | 331,713               | 1,011,534      | 42,704        | 119,674         |
| Net farm income              | 6,300                      | 31,536                | 75,484                | 213,897        | 2,472         | 21,032          |

1/ Includes nonfamily operations, limited resource, retirement, and residential/lifestyle farms. 2/ Due to small sample size, debt to life insurance companies is not shown separately but is included in the total. 3/ Includes program and nonprogram borrowers. 4/ Term debt coverage ratio = (Net farm income + nonfarm income + depreciation + interest on term debt + interest on capital leases - total income tax expense - family living expense) / (Scheduled principal and interest payments on term debt + scheduled principal and interest payments on capital leases).

Source: 1997 Agricultural Resource Management Study, Economic Research Service, USDA.

**Table B-4—Selected financial measures, all indebted farms, by primary lender, 1997 1/**

|                                 | Farm Credit System      | Banks   | Farm Service Agency | Individuals and others | No primary lender | All indebted farms 2/ |
|---------------------------------|-------------------------|---------|---------------------|------------------------|-------------------|-----------------------|
|                                 | <i>Dollars per farm</i> |         |                     |                        |                   |                       |
| Balance sheet:                  |                         |         |                     |                        |                   |                       |
| Total assets                    | 744,435                 | 453,906 | 408,571             | 507,859                | 1,082,326         | 528,409               |
| Total lender debt               | 144,222                 | 102,430 | 116,816             | 108,907                | 364,981           | 118,159               |
| Net worth                       | 600,213                 | 350,476 | 291,755             | 398,952                | 717,345           | 410,250               |
| Income statement:               |                         |         |                     |                        |                   |                       |
| Gross cash income               | 172,617                 | 107,943 | 89,518              | 96,512                 | 294,627           | 119,674               |
| Net farm income                 | 31,366                  | 19,453  | 18,196              | 16,652                 | 27,219            | 21,032                |
|                                 | <i>Percent</i>          |         |                     |                        |                   |                       |
| Solvency:                       |                         |         |                     |                        |                   |                       |
| Debt-to-asset ratio             | 19.4                    | 22.6    | 28.6                | 21.4                   | 33.7              | 22.4                  |
| Repayment capacity:             |                         |         |                     |                        |                   |                       |
| Term debt coverage ratio        | 2.6                     | 2.6     | 2                   | 2.1                    | 1.6               | 2.4                   |
| Borrower financial performance: |                         |         |                     |                        |                   |                       |
| Favorable 3/                    | 57.8                    | 51.2    | 45.3                | 48.6                   | 44.8              | 51.4                  |
| Marginal income 3/              | 27.5                    | 30.8    | 20.9                | 33.8                   | 27.1              | 30.3                  |
| Marginal solvency 3/            | 9.5                     | 8.1     | 16.9                | 6.7                    | 16.3              | 8.7                   |
| Vulnerable 3/                   | 5.2                     | 9.9     | 16.8                | 10.9                   | 11.8              | 9.7                   |

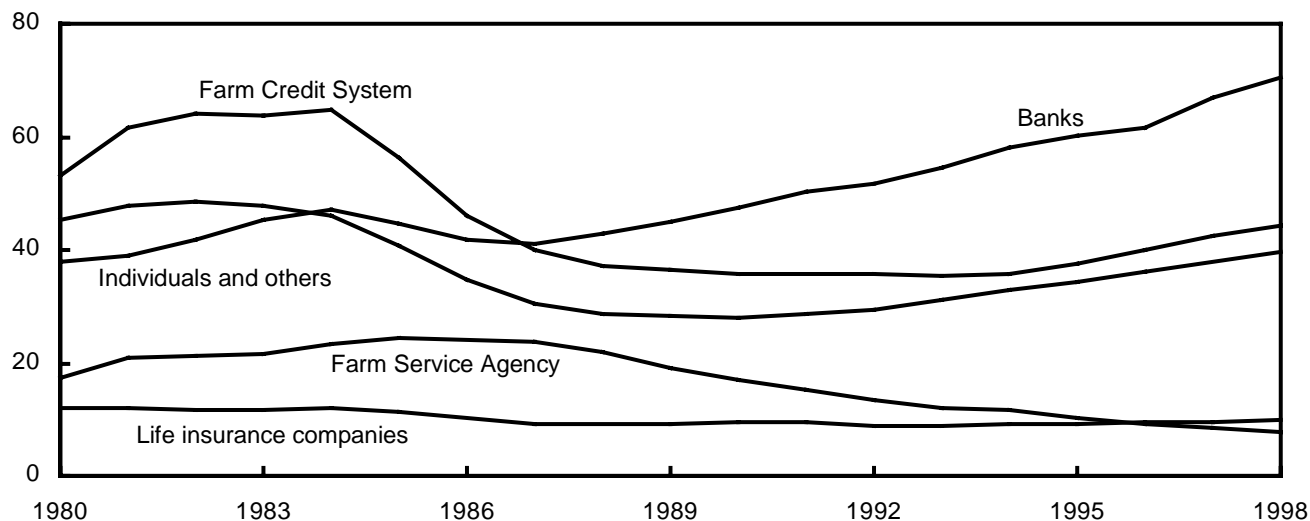
1/ A lender is considered to be the primary lender if more than 50 percent of the borrower's debt is owed to that lender group. 2/ Due to small sample size, data for operations reporting life insurance companies as primary lender are not shown separately, but are included in average for all indebted farms. 3/ Favorable performance is defined as net farm income greater than 0 and a debt-to-asset ratio less than or equal to .40; marginal income borrowers have net farm income less than or equal to 0 and a debt-to-asset ratio less than or equal to .40; marginal solvency means net farm income is greater than 0 and the debt-to-asset ratio is greater than .40; and for vulnerable net farm income is less than or equal to 0 and the debt-to-asset ratio is greater than .40.

Source: 1997 Agricultural Resource Management Study, Economic Research Service, USDA.

Figure B-1

# **Banks' farm business debt rising rapidly**

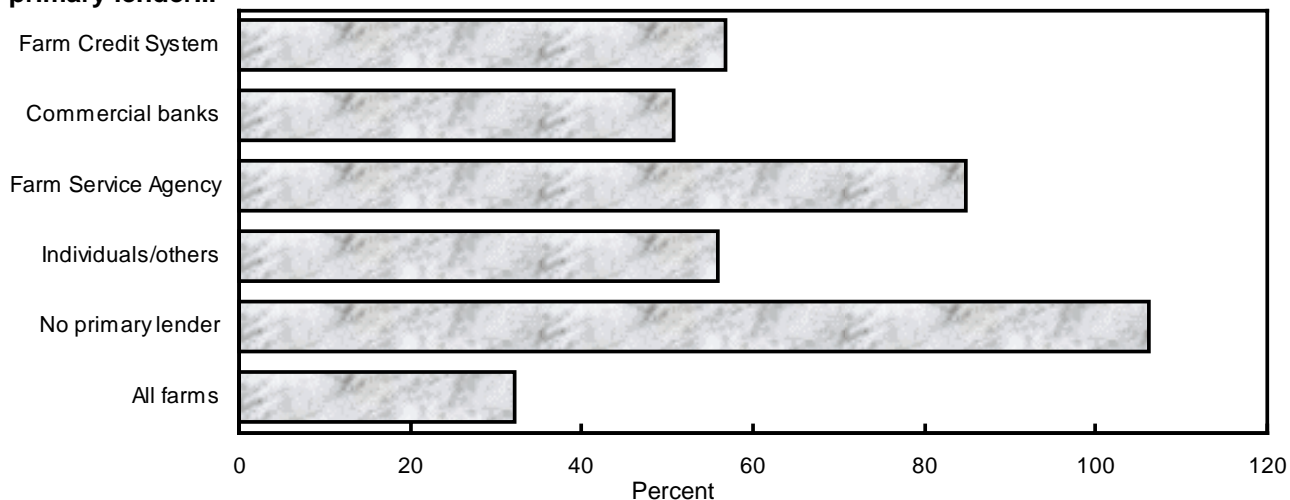
\$ billion



Source: Economic Research Service, USDA.

Figure B-2

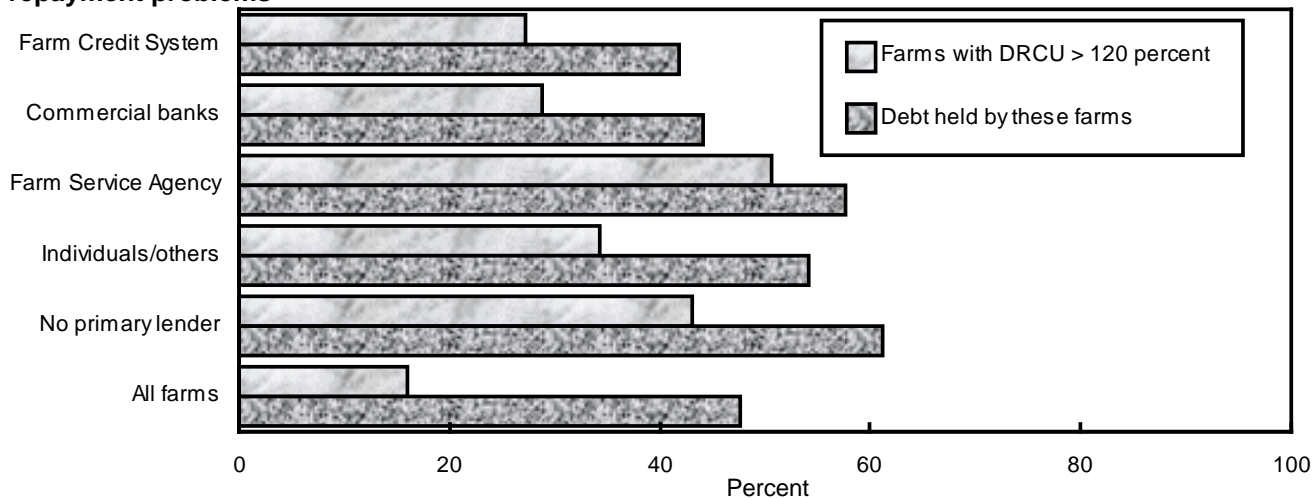
## **Debt repayment capacity utilization higher for Farm Service Agency borrowers, and those with no primary lender...**



Source: 1997 Agricultural Resource Management Study, Economic Research Service, USDA.

Figure B-3

## **...and a significant share of each lender's debt is owed by farms with potential repayment problems**



Source: 1997 Agricultural Resource Management Study, Economic Research Service, USDA.

## **Use of Debt Repayment Capacity Differs Among Lenders**

Analysis of farmers' use of debt repayment capacity provides additional insight concerning the ability of indebted farm operators to service their current debt loads. Debt repayment capacity utilization (DRCU) for the farm sector, as presented previously in this publication, is expected to rise from 53 percent in 1997 to 61 percent in 1998 (also see Ryan). That measure is defined as the ratio of actual farm debt to the maximum feasible debt that could be supported by the current farm income of the sector. As described there, DRCU provides an historical overview of farmers' relative use of credit capacity from 1970 through the end of 1998.

Data collected in the 1997 ARMS provide for a more detailed analysis of DRCU, allowing the influence of off-farm income, family withdrawals (living expenses), and payment of estimated income taxes to be included in the calculation of income available for debt coverage. The maximum principal and interest payment that a farmer could make based on total household income, and the maximum loan that the payment could service, can be estimated more precisely for farmers borrowing from each primary lender. Comparison of actual total liabilities with maximum debt supportable by income from all sources gives a more comprehensive measure of each respondent's individual DRCU. This analysis does not include any nonfarm debt owed by the farm operator's household.

Including the contribution of off-farm income to farm debt service, DRCU averaged 56 percent for all indebted farms in 1997 (figure B-2). Operators identifying banks as their primary lender owed about 51 of the debt that they could service with current income from all sources, while DRCU for FSA borrowers approached 85 percent. FCS borrowers were using about 57 percent of available credit lines.

Farms can often meet temporary income shortfalls with savings and liquidation of assets. However, if DRCU exceeds 1.2, meaning that the operation owes 20 percent more debt than can be serviced with current income, savings and inventory liquidation may be insufficient to cover the shortfall, and this debt may be at risk of default. About 35 percent of the operations reporting debt outstanding at the end of 1997 had DRCU greater than 1.2, but these farms owed 48 percent of all debt (figure B-3). Over 50 percent of FSA borrowers were in this high debt group, and these farms reported 58 percent of all debt owed to FSA. About 29 percent of bank borrowers were in this group, accounting for 44 percent of debt owed to banks, while the 28 percent of FCS borrowers classified as high DRCU owed 42 percent of FCS debt.

## **Summary**

The farm sector balance sheet shows a debt-to-asset ratio of 15 percent at the end of 1997, indicating that farmers were using a modest amount of leverage. However, when those 55 percent of farms that did not have any debt are excluded, the debt-to-asset ratio climbs to over 22 percent for indebted farms. Debt is concentrated in larger farms and more leveraged farms. The largest 11 percent of indebted farms, accounting for less than 5 percent of all farms, owe over a third of all farm debt. Many of these large farms with large debt burdens had favorable financial performance measures through the end of 1997. Yet, significant numbers could exhibit financial weakness in an environment of continuing low commodity prices. Of greatest concern is the 12 percent of farm debt owed by operations with debt-to-asset ratios exceeding .70. This high-risk group is most likely to default in the event of a downturn in farm economic conditions. Farm debt is also highly concentrated in certain lender groups. Commercial banks and the Farm Credit System are the primary creditors for 71 percent of farm operators. Borrowers of the FCS were found to be more financially secure than those of other identified lender groups.

## **References**

1. Dodson, C. B. and S. Koenig. "How Financially Stressed are Current FSA Borrowers," Lence, Sergio (ed.). *Financing Agriculture and Rural America: Issues of Policy, Structure, and Technical Change: Proceedings of NC-221*, Ames: Dept of Agr. Econ., Iowa State University (forthcoming).
2. Koenig, S. and C. Dodson. "Comparing Bank and FCS Farm Customers," *Journal of Agricultural Lending*. Vol. 8 Issue 2 (Winter 1995) pp. 24-29.
3. Ryan, James T. "Farm Operators' Utilization of Debt Repayment Capacity: A Leading Indicator of Farm Financial Stress." Lence, Sergio (ed.). *Financing Agriculture and Rural America: Issues of Policy, Structure, and Technical Change: Proceedings of NC-221*, Ames: Dept of Agr. Econ., Iowa State University (forthcoming).
4. U. S. Department of Agriculture, Economic Research Service. "Farm Debt Anticipated to Fall Slightly" in *Agricultural Income and Finance Report*, AIS-70. (Dec. 1998) pp. 18-23.
5. U. S. Department of Agriculture, Economic Research Service. *Financial Characteristics of U.S. Farms, January 1, 1986*. AIB No. 500, (August 1986), p.70.

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**Appendix table 1—Total farm business debt by lender, December 31, 1981-98**

|                                       | Debt owed to reporting institutions |                     |                           |                                |                        | Individuals<br>and<br>others 1/ | Total<br>debt |
|---------------------------------------|-------------------------------------|---------------------|---------------------------|--------------------------------|------------------------|---------------------------------|---------------|
|                                       | Farm<br>Credit<br>System            | Commercial<br>banks | Farm<br>Service<br>Agency | Life<br>insurance<br>companies | Total<br>institutional |                                 |               |
| Million dollars                       |                                     |                     |                           |                                |                        |                                 |               |
| 1981                                  | 61,566                              | 38,798              | 20,802                    | 12,150                         | 133,316                | 49,065                          | 182,381       |
| 1982                                  | 64,220                              | 41,890              | 21,274                    | 11,829                         | 139,214                | 49,592                          | 188,806       |
| 1983                                  | 63,710                              | 45,422              | 21,428                    | 11,668                         | 142,228                | 48,842                          | 191,070       |
| 1984                                  | 64,688                              | 47,245              | 23,262                    | 11,891                         | 147,086                | 46,701                          | 193,787       |
| 1985                                  | 56,169                              | 44,470              | 24,535                    | 11,273                         | 136,447                | 41,152                          | 177,599       |
| 1986                                  | 45,909                              | 41,621              | 24,138                    | 10,377                         | 122,044                | 34,926                          | 156,970       |
| 1987                                  | 40,030                              | 41,130              | 23,553                    | 9,355                          | 114,069                | 30,342                          | 144,411       |
| 1988                                  | 37,211                              | 42,742              | 21,879                    | 9,039                          | 110,873                | 28,694                          | 139,567       |
| 1989                                  | 36,440                              | 44,929              | 19,047                    | 9,113                          | 109,529                | 28,330                          | 137,859       |
| 1990                                  | 35,773                              | 47,556              | 17,014                    | 9,704                          | 110,046                | 27,916                          | 137,962       |
| 1991                                  | 35,527                              | 50,271              | 15,253                    | 9,546                          | 110,598                | 28,620                          | 139,218       |
| 1992                                  | 35,753                              | 51,669              | 13,538                    | 8,765                          | 109,725                | 29,327                          | 139,052       |
| 1993                                  | 35,439                              | 54,533              | 12,076                    | 8,985                          | 111,035                | 30,929                          | 141,964       |
| 1994                                  | 35,777                              | 57,809              | 11,485                    | 9,025                          | 114,096                | 32,704                          | 146,800       |
| 1995                                  | 37,324                              | 60,025              | 10,147                    | 9,092                          | 116,588                | 34,182                          | 150,769       |
| 1996                                  | 39,745                              | 61,620              | 9,316                     | 9,468                          | 120,149                | 35,925                          | 156,074       |
| 1997                                  | 42,341                              | 66,952              | 8,655                     | 9,699                          | 127,647                | 37,766                          | 165,413       |
| 1998P                                 | 43,947                              | 69,898              | 8,234                     | 9,918                          | 131,997                | 38,363                          | 170,360       |
| Percent change in year                |                                     |                     |                           |                                |                        |                                 |               |
| 1981                                  | 16.2                                | 2.8                 | 19.1                      | 1.3                            | 10.9                   | 5.2                             | 9.3           |
| 1982                                  | 4.3                                 | 8.0                 | 2.2                       | -2.6                           | 4.4                    | 1.1                             | 3.5           |
| 1983                                  | -0.8                                | 8.4                 | 0.7                       | -1.4                           | 2.2                    | -1.5                            | 1.2           |
| 1984                                  | 1.5                                 | 4.0                 | 8.6                       | 1.9                            | 3.4                    | -4.4                            | 1.4           |
| 1985                                  | -13.2                               | -5.9                | 5.5                       | -5.2                           | -7.2                   | -11.9                           | -8.4          |
| 1986                                  | -18.3                               | -6.4                | -1.6                      | -8.0                           | -10.6                  | -15.1                           | -11.6         |
| 1987                                  | -12.8                               | -1.2                | -2.4                      | -9.8                           | -6.5                   | -13.1                           | -8.0          |
| 1988                                  | -7.0                                | 3.9                 | -7.1                      | -3.4                           | -2.8                   | -5.4                            | -3.4          |
| 1989                                  | -2.1                                | 5.1                 | -12.9                     | 0.8                            | -1.2                   | -1.2                            | -1.2          |
| 1990                                  | -1.8                                | 5.8                 | -10.7                     | 6.5                            | 0.5                    | -1.4                            | 0.1           |
| 1991                                  | -0.7                                | 5.7                 | -10.3                     | -1.6                           | 0.5                    | 2.5                             | 0.9           |
| 1992                                  | 0.6                                 | 2.8                 | -11.2                     | -8.2                           | -0.8                   | 2.5                             | -0.1          |
| 1993                                  | -0.9                                | 5.6                 | -10.8                     | 2.5                            | 1.2                    | 5.5                             | 2.1           |
| 1994                                  | 1.0                                 | 6.0                 | -4.9                      | 0.5                            | 2.8                    | 5.7                             | 3.4           |
| 1995                                  | 4.3                                 | 3.8                 | -11.7                     | 0.7                            | 2.2                    | 4.5                             | 2.7           |
| 1996                                  | 6.5                                 | 2.7                 | -8.2                      | 4.1                            | 3.4                    | 5.1                             | 3.5           |
| 1997                                  | 6.5                                 | 8.7                 | -7.1                      | 2.4                            | 3.2                    | 5.1                             | 6.0           |
| 1998P                                 | 3.8                                 | 4.4                 | -4.9                      | 2.3                            | 3.4                    | 1.6                             | 3.0           |
| Percentage distribution of total debt |                                     |                     |                           |                                |                        |                                 |               |
| 1981                                  | 33.8                                | 21.3                | 11.4                      | 6.7                            | 73.1                   | 26.9                            | 100.0         |
| 1982                                  | 34.0                                | 22.2                | 11.3                      | 6.3                            | 73.7                   | 26.3                            | 100.0         |
| 1983                                  | 33.3                                | 23.8                | 11.2                      | 6.1                            | 74.4                   | 25.6                            | 100.0         |
| 1984                                  | 33.4                                | 24.4                | 12.0                      | 6.1                            | 75.9                   | 24.1                            | 100.0         |
| 1985                                  | 31.6                                | 25.0                | 13.8                      | 6.3                            | 76.8                   | 23.2                            | 100.0         |
| 1986                                  | 29.2                                | 26.5                | 15.4                      | 6.6                            | 77.7                   | 22.3                            | 100.0         |
| 1987                                  | 27.7                                | 28.5                | 16.3                      | 6.5                            | 79.0                   | 21.0                            | 100.0         |
| 1988                                  | 26.7                                | 30.6                | 15.7                      | 6.5                            | 79.5                   | 20.5                            | 100.0         |
| 1989                                  | 26.4                                | 32.6                | 13.8                      | 6.6                            | 79.5                   | 20.5                            | 100.0         |
| 1990                                  | 25.9                                | 34.5                | 12.3                      | 7.0                            | 79.8                   | 20.2                            | 100.0         |
| 1991                                  | 25.5                                | 36.1                | 11.0                      | 6.9                            | 79.4                   | 20.6                            | 100.0         |
| 1992                                  | 25.7                                | 37.2                | 9.7                       | 6.3                            | 78.9                   | 21.1                            | 100.0         |
| 1993                                  | 25.0                                | 38.4                | 8.5                       | 6.3                            | 78.2                   | 21.8                            | 100.0         |
| 1994                                  | 24.4                                | 39.4                | 7.8                       | 6.2                            | 77.7                   | 22.3                            | 100.0         |
| 1995                                  | 24.8                                | 39.8                | 6.7                       | 6.1                            | 77.3                   | 22.7                            | 100.0         |
| 1996                                  | 25.5                                | 39.4                | 6.0                       | 6.1                            | 77.0                   | 23.0                            | 100.0         |
| 1997                                  | 25.6                                | 40.5                | 5.2                       | 5.9                            | 77.2                   | 22.8                            | 100.0         |
| 1998P                                 | 25.8                                | 41.0                | 4.8                       | 5.8                            | 77.5                   | 22.5                            | 100.0         |

P = Preliminary. 1/ In addition to individuals, this category includes land for contract, merchants' and dealers' credit, etc., CCC storage and drying facilities loans, and Farmer Mac loans.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit System, Farm Service Agency, U.S. Census of Agriculture Finance Surveys, and U.S. Department of Agriculture farm operator surveys.

**Appendix table 2—Real estate farm business debt by lender, December 31, 1981-98**

|                                 | Debt owed to reporting institutions |                     |                          |                  |                     | Individuals and others 1/ | CCC storage and drying facilities | Total real estate |
|---------------------------------|-------------------------------------|---------------------|--------------------------|------------------|---------------------|---------------------------|-----------------------------------|-------------------|
|                                 | Farm Credit System                  | Farm Service Agency | Life insurance companies | Commercial banks | Total institutional |                           |                                   |                   |
| Million dollars                 |                                     |                     |                          |                  |                     |                           |                                   |                   |
| 1981                            | 40,298                              | 8,096               | 12,150                   | 7,584            | 68,128              | 29,318                    | 1,342                             | 98,788            |
| 1982                            | 43,661                              | 8,298               | 11,829                   | 7,568            | 71,357              | 29,326                    | 1,127                             | 101,810           |
| 1983                            | 44,318                              | 8,573               | 11,668                   | 8,347            | 72,906              | 29,388                    | 888                               | 103,182           |
| 1984                            | 46,596                              | 9,523               | 11,891                   | 9,626            | 77,636              | 28,438                    | 623                               | 106,697           |
| 1985                            | 42,169                              | 9,821               | 11,273                   | 10,732           | 73,994              | 25,775                    | 307                               | 100,076           |
| 1986                            | 35,593                              | 9,713               | 10,377                   | 11,942           | 67,725              | 22,660                    | 123                               | 90,408            |
| 1987                            | 30,646                              | 9,430               | 9,355                    | 13,541           | 62,972              | 19,380                    | 46                                | 82,398            |
| 1988                            | 28,445                              | 8,980               | 9,039                    | 14,434           | 60,898              | 16,914                    | 21                                | 77,833            |
| 1989                            | 26,896                              | 8,203               | 9,113                    | 15,685           | 59,898              | 16,068                    | 12                                | 75,978            |
| 1990                            | 25,924                              | 7,639               | 9,704                    | 16,288           | 59,556              | 15,169                    | 7                                 | 74,732            |
| 1991                            | 25,305                              | 7,041               | 9,546                    | 17,417           | 59,308              | 15,632                    | 4                                 | 74,944            |
| 1992                            | 25,408                              | 6,394               | 8,765                    | 18,757           | 59,324              | 16,095                    | 2                                 | 75,421            |
| 1993                            | 24,900                              | 5,837               | 8,985                    | 19,595           | 59,317              | 16,719                    | 0                                 | 76,036            |
| 1994                            | 24,597                              | 5,465               | 9,025                    | 21,079           | 60,166              | 17,514                    | 0                                 | 77,680            |
| 1995                            | 24,851                              | 5,055               | 9,092                    | 22,277           | 61,275              | 18,012                    | 0                                 | 79,287            |
| 1996                            | 25,730                              | 4,702               | 9,498                    | 23,276           | 63,176              | 18,481                    | 0                                 | 81,657            |
| 1997                            | 27,098                              | 4,373               | 9,699                    | 25,240           | 66,409              | 18,950                    | 0                                 | 85,359            |
| 1998P                           | 28,107                              | 4,126               | 9,918                    | 26,673           | 68,824              | 18,763                    | 0                                 | 87,587            |
| Percent change in year          |                                     |                     |                          |                  |                     |                           |                                   |                   |
| 1981                            | 21.3                                | 8.9                 | 1.3                      | -2.3             | 12.8                | 5.4                       | -7.8                              | 10.1              |
| 1982                            | 8.3                                 | 2.5                 | -2.6                     | -0.2             | 4.7                 | 0.0                       | -16.0                             | 3.1               |
| 1983                            | 1.5                                 | 3.3                 | -1.4                     | 10.3             | 2.2                 | 0.2                       | -21.2                             | 1.3               |
| 1984                            | 5.1                                 | 11.1                | 1.9                      | 15.3             | 6.5                 | -3.2                      | -29.8                             | 3.4               |
| 1985                            | -9.5                                | 3.1                 | -5.2                     | 11.5             | -4.7                | -9.4                      | -50.7                             | -6.2              |
| 1986                            | -15.6                               | -1.1                | -7.9                     | 11.3             | -8.5                | -12.1                     | -59.9                             | -9.7              |
| 1987                            | -13.9                               | -2.9                | -9.8                     | 13.4             | -7.0                | -14.5                     | -62.6                             | -8.9              |
| 1988                            | -7.2                                | -4.8                | -3.4                     | 6.6              | -3.3                | -12.7                     | -54.9                             | -5.5              |
| 1989                            | -5.4                                | -8.6                | 0.8                      | 8.7              | -1.6                | -5.0                      | -43.9                             | -2.4              |
| 1990                            | -3.6                                | -6.9                | 6.5                      | 3.8              | -0.6                | -5.6                      | -43.8                             | -1.6              |
| 1991                            | -2.4                                | -7.8                | -1.6                     | 6.9              | -0.4                | 3.0                       | -41.8                             | 0.3               |
| 1992                            | 0.4                                 | -9.2                | -8.2                     | 7.7              | 0.0                 | 3.0                       | -47.6                             | 0.6               |
| 1993                            | -2.0                                | -8.7                | 2.5                      | 4.5              | 0.0                 | 3.9                       | -100.0                            | 0.8               |
| 1994                            | -1.2                                | -6.4                | 0.5                      | 7.6              | 1.4                 | 4.8                       | 0.0                               | 2.2               |
| 1995                            | 1.0                                 | -7.5                | 0.7                      | 5.7              | 1.8                 | 2.8                       | 0.0                               | 2.1               |
| 1996                            | 3.5                                 | -7.0                | 4.1                      | 4.5              | 3.1                 | 2.6                       | 0.0                               | 3.0               |
| 1997                            | 5.3                                 | -7.0                | 2.4                      | 8.4              | 5.1                 | 2.5                       | 0.0                               | 4.5               |
| 1998P                           | 3.7                                 | -5.7                | 2.3                      | 5.7              | 3.6                 | -1.0                      | 0.0                               | 2.6               |
| Percentage distribution of debt |                                     |                     |                          |                  |                     |                           |                                   |                   |
| 1981                            | 40.8                                | 8.2                 | 12.3                     | 7.7              | 69.0                | 29.7                      | 1.4                               | 100.0             |
| 1982                            | 42.9                                | 8.2                 | 11.6                     | 7.4              | 70.1                | 28.8                      | 1.1                               | 100.0             |
| 1983                            | 43.0                                | 8.3                 | 11.3                     | 8.1              | 70.7                | 28.5                      | 0.9                               | 100.0             |
| 1984                            | 43.7                                | 8.9                 | 11.1                     | 9.0              | 72.8                | 26.7                      | 0.6                               | 100.0             |
| 1985                            | 42.1                                | 9.8                 | 11.3                     | 10.7             | 73.9                | 25.8                      | 0.3                               | 100.0             |
| 1986                            | 39.4                                | 10.7                | 11.5                     | 13.2             | 74.8                | 25.1                      | 0.1                               | 100.0             |
| 1987                            | 37.2                                | 11.4                | 11.4                     | 16.4             | 76.4                | 23.5                      | 0.1                               | 100.0             |
| 1988                            | 36.5                                | 11.5                | 11.6                     | 18.5             | 78.2                | 21.7                      | 0.0                               | 100.0             |
| 1989                            | 35.4                                | 10.8                | 12.0                     | 20.6             | 78.8                | 21.1                      | 0.0                               | 100.0             |
| 1990                            | 34.7                                | 10.2                | 13.0                     | 21.8             | 79.6                | 20.3                      | 0.0                               | 100.0             |
| 1991                            | 33.8                                | 9.4                 | 12.7                     | 23.2             | 79.1                | 20.9                      | 0.0                               | 100.0             |
| 1992                            | 33.7                                | 8.5                 | 11.6                     | 24.9             | 78.7                | 21.3                      | 0.0                               | 100.0             |
| 1993                            | 32.8                                | 7.7                 | 11.8                     | 25.8             | 78.0                | 22.0                      | 0.0                               | 100.0             |
| 1994                            | 31.7                                | 7.0                 | 11.6                     | 27.1             | 77.5                | 22.6                      | 0.0                               | 100.0             |
| 1995                            | 31.3                                | 6.4                 | 11.5                     | 28.1             | 77.3                | 22.7                      | 0.0                               | 100.0             |
| 1996                            | 31.5                                | 5.8                 | 11.6                     | 28.5             | 77.4                | 22.6                      | 0.0                               | 100.0             |
| 1997                            | 31.8                                | 5.1                 | 11.4                     | 29.6             | 77.8                | 22.2                      | 0.0                               | 100.0             |
| 1998P                           | 32.1                                | 4.7                 | 11.3                     | 30.5             | 78.6                | 21.4                      | 0.0                               | 100.0             |

P = Preliminary. 1/ Including Farmer Mac loans.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit System, Farm Service Agency, U.S. Census of Agriculture Finance Surveys, and U.S. Department of Agriculture farm operator surveys.

**Appendix table 3—Nonreal estate farm business debt by lender, December 31, 1981-98**

|                                 | Debt owed to reporting institutions |                          |                           |                        | Individuals<br>and<br>others | Total<br>nonreal<br>estate | CCC<br>crop<br>loans |
|---------------------------------|-------------------------------------|--------------------------|---------------------------|------------------------|------------------------------|----------------------------|----------------------|
|                                 | Commercial<br>banks                 | Farm<br>Credit<br>System | Farm<br>Service<br>Agency | Total<br>institutional |                              |                            |                      |
| Million dollars                 |                                     |                          |                           |                        |                              |                            |                      |
| 1979                            | 29,327                              | 18,054                   | 8,188                     | 55,569                 | 16,278                       | 71,847                     | 3,714                |
| 1980                            | 29,986                              | 19,750                   | 10,029                    | 59,765                 | 17,367                       | 77,132                     | 3,836                |
| 1981                            | 31,215                              | 21,268                   | 12,706                    | 65,189                 | 18,404                       | 83,593                     | 6,888                |
| 1982                            | 34,322                              | 20,558                   | 12,977                    | 67,857                 | 19,139                       | 86,996                     | 15,204               |
| 1983                            | 37,075                              | 19,392                   | 12,855                    | 69,322                 | 18,566                       | 87,888                     | 10,576               |
| 1984                            | 37,619                              | 18,092                   | 13,740                    | 69,451                 | 17,640                       | 87,091                     | 8,428                |
| 1985                            | 33,738                              | 14,001                   | 14,714                    | 62,453                 | 15,070                       | 77,523                     | 17,598               |
| 1986                            | 29,678                              | 10,317                   | 14,425                    | 54,420                 | 12,143                       | 66,563                     | 19,190               |
| 1987                            | 27,589                              | 9,384                    | 14,123                    | 51,096                 | 10,916                       | 62,012                     | 15,120               |
| 1988                            | 28,309                              | 8,766                    | 12,899                    | 49,974                 | 11,760                       | 61,734                     | 8,902                |
| 1989                            | 29,243                              | 9,544                    | 10,843                    | 49,631                 | 12,250                       | 61,881                     | 5,225                |
| 1990                            | 31,267                              | 9,848                    | 9,374                     | 50,490                 | 12,740                       | 63,230                     | 4,377                |
| 1991                            | 32,854                              | 10,222                   | 8,213                     | 51,289                 | 12,985                       | 64,274                     | 3,579                |
| 1992                            | 32,912                              | 10,346                   | 7,143                     | 51,401                 | 13,230                       | 63,631                     | 4,771                |
| 1993                            | 34,939                              | 10,540                   | 6,239                     | 51,717                 | 14,210                       | 65,927                     | 3,170                |
| 1994                            | 36,730                              | 11,180                   | 6,020                     | 53,930                 | 15,190                       | 69,120                     | 6,237                |
| 1995                            | 37,748                              | 12,472                   | 5,092                     | 55,312                 | 16,170                       | 71,482                     | 2,979                |
| 1996                            | 38,344                              | 14,015                   | 4,614                     | 57,355                 | 17,444                       | 74,417                     | 2,000                |
| 1997                            | 41,713                              | 15,243                   | 4,283                     | 59,263                 | 18,816                       | 80,054                     | 1,000                |
| 1998P                           | 43,225                              | 15,840                   | 4,108                     | 63,173                 | 19,600                       | 82,773                     | 1,000                |
| Percent change in year          |                                     |                          |                           |                        |                              |                            |                      |
| 1981                            | 4.1                                 | 7.7                      | 26.7                      | 9.1                    | 6.0                          | 8.4                        | 79.6                 |
| 1982                            | 10.0                                | -3.3                     | 2.1                       | 4.1                    | 4.0                          | 4.1                        | 120.7                |
| 1983                            | 8.0                                 | -5.7                     | -0.9                      | 2.2                    | -3.0                         | 1.0                        | -30.4                |
| 1984                            | 1.5                                 | -6.7                     | 6.9                       | 0.2                    | -5.0                         | -0.9                       | -20.3                |
| 1985                            | -10.3                               | -22.6                    | 7.1                       | -10.1                  | -14.6                        | -11.0                      | 108.8                |
| 1986                            | -12.0                               | -26.3                    | -2.0                      | -12.9                  | -19.4                        | -14.1                      | 9.0                  |
| 1987                            | -7.0                                | -9.0                     | -2.1                      | -6.1                   | -10.1                        | -6.8                       | -21.2                |
| 1988                            | 2.6                                 | -6.6                     | -8.7                      | -2.2                   | 7.7                          | -0.4                       | -41.1                |
| 1989                            | 3.3                                 | 8.9                      | -15.9                     | -0.7                   | 4.2                          | 0.2                        | -41.3                |
| 1990                            | 6.9                                 | 3.2                      | -13.5                     | 1.7                    | 4.0                          | 2.2                        | -16.2                |
| 1991                            | 5.1                                 | 3.8                      | -12.4                     | 1.6                    | 1.9                          | 1.7                        | -18.2                |
| 1992                            | 0.2                                 | 1.2                      | -13.0                     | 0.2                    | 1.9                          | -1.0                       | 33.3                 |
| 1993                            | 6.2                                 | 1.9                      | -12.7                     | 0.1                    | 7.4                          | 3.6                        | -33.6                |
| 1994                            | 5.1                                 | 6.1                      | -3.5                      | 4.3                    | 6.9                          | 4.8                        | 96.8                 |
| 1995                            | 2.7                                 | 11.6                     | -15.4                     | 2.6                    | 6.5                          | 3.4                        | -52.2                |
| 1996                            | 1.6                                 | 12.2                     | -9.4                      | 3.7                    | 7.9                          | 4.2                        | -32.9                |
| 1997                            | 8.8                                 | 8.9                      | -7.2                      | 3.3                    | 7.9                          | 7.6                        | -50.0                |
| 1998P                           | 3.6                                 | 3.9                      | -4.1                      | 6.8                    | 4.2                          | 3.4                        | 0.0                  |
| Percentage distribution of debt |                                     |                          |                           |                        |                              |                            |                      |
| 1981                            | 37.3                                | 25.4                     | 15.2                      | 78.0                   | 22.0                         | 100.0                      |                      |
| 1982                            | 39.5                                | 23.6                     | 14.9                      | 78.0                   | 22.0                         | 100.0                      |                      |
| 1983                            | 42.2                                | 22.1                     | 14.6                      | 78.9                   | 21.1                         | 100.0                      |                      |
| 1984                            | 43.2                                | 20.8                     | 15.8                      | 79.7                   | 20.3                         | 100.0                      |                      |
| 1985                            | 43.5                                | 18.1                     | 19.0                      | 80.6                   | 19.4                         | 100.0                      |                      |
| 1986                            | 44.6                                | 15.5                     | 21.7                      | 81.8                   | 18.2                         | 100.0                      |                      |
| 1987                            | 44.5                                | 15.1                     | 22.8                      | 82.4                   | 17.6                         | 100.0                      |                      |
| 1988                            | 45.9                                | 14.2                     | 20.9                      | 81.0                   | 19.0                         | 100.0                      |                      |
| 1989                            | 47.3                                | 15.4                     | 17.5                      | 80.2                   | 19.8                         | 100.0                      |                      |
| 1990                            | 49.5                                | 15.6                     | 14.8                      | 79.8                   | 20.1                         | 100.0                      |                      |
| 1991                            | 51.1                                | 15.9                     | 12.8                      | 79.8                   | 20.2                         | 100.0                      |                      |
| 1992                            | 51.7                                | 16.3                     | 11.2                      | 79.5                   | 20.8                         | 100.0                      |                      |
| 1993                            | 53.0                                | 16.0                     | 9.5                       | 78.4                   | 21.6                         | 100.0                      |                      |
| 1994                            | 53.1                                | 16.2                     | 8.7                       | 78.0                   | 22.0                         | 100.0                      |                      |
| 1995                            | 52.8                                | 17.5                     | 7.1                       | 77.4                   | 22.6                         | 100.0                      |                      |
| 1996                            | 51.5                                | 18.8                     | 6.2                       | 76.7                   | 23.4                         | 100.0                      |                      |
| 1997                            | 52.1                                | 19.0                     | 5.4                       | 74.0                   | 23.5                         | 100.0                      |                      |
| 1998P                           | 52.2                                | 19.1                     | 5.0                       | 76.3                   | 23.7                         | 100.0                      |                      |

P = Preliminary.

Sources: Board of Governors of the Federal Reserve System, Farm Credit System, Farm Service Agency, U.S. Census of Agriculture Finance Surveys, and U.S. Department of Agriculture farm operator surveys.



**Appendix table 4—Interest rates on short- and intermediate-term loans, 1960-98**

| Year    | Prime rate | 6-month T-Bill 1/ | Agricultural nonreal estate |             |             |                    |         |                  | Average on out-standing debt 3/ |
|---------|------------|-------------------|-----------------------------|-------------|-------------|--------------------|---------|------------------|---------------------------------|
|         |            |                   | Commercial banks            |             |             | Farm Credit System | FSA 2/  |                  |                                 |
|         |            |                   | All banks                   | Large banks | Other banks |                    | Regular | Limited resource |                                 |
| Percent |            |                   |                             |             |             |                    |         |                  |                                 |
| 1960    | 4.82       | NA                | NA                          | NA          | NA          | NA                 | 5.00    | NA               | 6.58                            |
| 1965    | 4.54       | NA                | NA                          | NA          | NA          | NA                 | 5.00    | NA               | 6.38                            |
| 1970    | 7.91       | 6.87              | NA                          | NA          | NA          | 9.45               | 6.88    | NA               | 7.84                            |
| 1975    | 7.86       | 6.39              | NA                          | NA          | NA          | 9.11               | 8.63    | NA               | 8.21                            |
| 1980    | 15.27      | 12.39             | 15.20                       | 16.70       | 15.00       | 12.74              | 11.00   | 6.82             | 11.70                           |
| 1981    | 18.87      | 15.06             | 18.50                       | 19.80       | 18.10       | 14.46              | 14.04   | 8.13             | 13.34                           |
| 1982    | 14.86      | 11.96             | 16.70                       | 16.10       | 17.00       | 14.58              | 13.73   | 10.75            | 13.31                           |
| 1983    | 10.79      | 9.27              | 13.50                       | 12.10       | 14.10       | 11.95              | 10.31   | 7.31             | 12.14                           |
| 1984    | 12.04      | 10.46             | 14.10                       | 13.10       | 14.40       | 12.47              | 10.25   | 7.25             | 11.88                           |
| 1985    | 9.93       | 8.09              | 12.80                       | 11.20       | 13.40       | 12.40              | 10.25   | 7.25             | 10.61                           |
| 1986    | 8.33       | 6.30              | 11.50                       | 9.60        | 12.10       | 11.23              | 8.66    | 5.66             | 10.23                           |
| 1987    | 8.21       | 6.35              | 10.60                       | 9.20        | 11.30       | 10.10              | 8.12    | 5.27             | 10.53                           |
| 1988    | 9.32       | 7.27              | 11.20                       | 10.20       | 11.60       | 10.56              | 9.02    | 6.02             | 10.50                           |
| 1989    | 10.88      | 8.50              | 12.50                       | 12.10       | 12.70       | 11.68              | 9.10    | 6.10             | 10.64                           |
| 1990    | 10.01      | 7.87              | 11.40                       | 10.90       | 12.30       | 11.16              | 8.90    | 5.82             | 10.76                           |
| 1991    | 8.47       | 5.72              | 9.80                        | 9.00        | 11.30       | 10.10              | 8.25    | 5.00             | 9.86                            |
| 1992    | 6.25       | 3.69              | 7.80                        | 6.80        | 9.40        | 8.20               | 6.79    | 5.00             | 8.59                            |
| I       | 6.50       | 4.16              | 8.00                        | 6.80        | 9.70        | 8.51               | 7.17    | 5.00             | NA                              |
| II      | 6.50       | 3.97              | 8.30                        | 7.20        | 9.70        | 8.38               | 7.00    | 5.00             | NA                              |
| III     | 6.01       | 3.30              | 7.80                        | 6.80        | 9.40        | 8.09               | 7.00    | 5.00             | NA                              |
| IV      | 6.00       | 3.34              | 7.40                        | 6.30        | 8.90        | 7.81               | 6.00    | 5.00             | NA                              |
| 1993    | 6.00       | 3.23              | 7.50                        | 6.70        | 8.70        | 8.09               | 5.88    | 5.00             | 8.29                            |
| I       | 6.00       | 3.20              | 7.60                        | 6.60        | 8.80        | 8.35               | 6.33    | 5.00             | NA                              |
| II      | 6.00       | 3.19              | 7.50                        | 6.70        | 8.90        | 8.15               | 6.00    | 5.00             | NA                              |
| III     | 6.00       | 3.22              | 7.50                        | 7.00        | 8.60        | 8.08               | 5.75    | 5.00             | NA                              |
| IV      | 6.00       | 3.32              | 7.30                        | 6.70        | 8.60        | 7.77               | 5.42    | 5.00             | NA                              |
| 1994    | 7.14       | 4.83              | 7.70                        | 7.10        | 8.75        | 8.23               | 6.46    | 5.00             | 8.91                            |
| I       | 6.02       | 3.57              | 7.20                        | 6.50        | 8.20        | 7.46               | 5.25    | 5.00             | NA                              |
| II      | 6.90       | 4.61              | 7.70                        | 6.90        | 8.60        | 8.06               | 6.08    | 5.00             | NA                              |
| III     | 7.50       | 5.11              | 7.70                        | 7.30        | 9.00        | 8.44               | 7.25    | 5.00             | NA                              |
| IV      | 8.13       | 6.02              | 8.20                        | 7.70        | 9.20        | 8.96               | 7.25    | 5.00             | NA                              |
| 1995    | 8.83       | 5.85              | 9.50                        | 9.10        | 10.45       | 8.89               | 7.38    | 5.00             | 9.56                            |
| I       | 8.83       | 6.39              | 10.00                       | 9.70        | 10.40       | 9.04               | 8.25    | 5.00             | NA                              |
| II      | 9.00       | 5.91              | 9.40                        | 8.90        | 10.30       | 8.96               | 7.92    | 5.00             | NA                              |
| III     | 8.77       | 5.60              | 9.50                        | 9.00        | 10.50       | 8.84               | 6.83    | 5.00             | NA                              |
| IV      | 8.72       | 5.49              | 9.20                        | 8.80        | 10.60       | 8.73               | 6.50    | 5.00             | NA                              |
| 1996    | 8.27       | 5.28              | 8.50                        | 7.80        | 10.10       | 8.55               | 6.58    | 5.00             | 9.60                            |
| I       | 8.33       | 5.07              | 8.50                        | 7.70        | 10.00       | 8.16               | 6.33    | 5.00             | NA                              |
| II      | 8.25       | 5.35              | 8.10                        | 7.40        | 10.10       | 8.53               | 6.17    | 5.00             | NA                              |
| III     | 8.25       | 5.43              | 8.60                        | 8.10        | 10.20       | 8.75               | 6.83    | 5.00             | NA                              |
| IV      | 8.25       | 5.27              | 8.70                        | 8.00        | 9.90        | 8.76               | 7.00    | 5.00             | NA                              |
| 1997    | 8.44       | 5.39              | 9.25                        | 8.69        | 10.03       | 8.92               | 6.73    | 5.00             | 9.39                            |
| I       | 8.24       | 5.35              | 9.10                        | 8.60        | 9.80        | 8.94               | 6.50    | 5.00             | NA                              |
| II      | 8.50       | 5.49              | 9.30                        | 8.60        | 10.10       | 8.94               | 6.67    | 5.00             | NA                              |
| III     | 8.50       | 5.34              | 9.40                        | 8.90        | 10.10       | 8.92               | 7.00    | 5.00             | NA                              |
| IV      | 8.50       | 5.38              | 9.20                        | 8.60        | 10.10       | 8.87               | 6.75    | 5.00             | NA                              |
| 1998P   | 8.36       | 5.02              | 8.95                        | 8.28        | 9.78        | 8.59               | 5.92    | 5.00             | 9.09                            |
| I       | 8.50       | 5.25              | 9.10                        | 8.20        | 9.90        | 8.80               | 6.25    | 5.00             | NA                              |
| II      | 8.50       | 5.32              | 9.20                        | 8.50        | 9.90        | 8.58               | 6.00    | 5.00             | NA                              |
| III     | 8.50       | 5.06              | 9.00                        | 8.50        | 9.90        | 8.62               | 6.00    | 5.00             | NA                              |
| IV      | 7.92       | 4.45              | 8.50                        | 7.90        | 9.40        | 8.41               | 5.42    | 5.00             | NA                              |

NA = Not Available. P = preliminary for the Farm Credit System. 1/ Auction average investment yield. 2/ New operating loans. 3/ Average on outstanding farm business debt. Note: Because of changes in the practices of agricultural lenders over time and differences in the types of loans used to calculate each lender's interest rate series, interest rates across columns and over time are roughly rather than exactly comparable.

Sources: Board of Governors of the Federal Reserve System, Economic Research Service, various Farm Credit District Banks, and Farm Service Agency.

**Appendix table 5—Interest rates on long-term loans, 1960-98**

| Interest rates on long-term loans, 1960-99 |                             |                     |                          |                                |         |                     |                                      |                                     |
|--|-----------------------------|---------------------|--------------------------|--------------------------------|---------|---------------------|--------------------------------------|-------------------------------------|
| Year                                       | U.S.<br>Treasury<br>bond 1/ | Commercial<br>banks | Agricultural real estate |                                |         |                     | Average on<br>outstanding<br>debt 3/ | Average<br>on total<br>farm debt 4/ |
|  |                             |                     | Farm<br>Credit<br>System | Life<br>insurance<br>companies | FSA 2/  |                     |                                      |                                     |
|  |                             |                     |                          |                                | Regular | Limited<br>resource |                                      |                                     |
| Percent                                    |                             |                     |                          |                                |         |                     |                                      |                                     |
| 1960                                       | 4.02                        | NA                  | NA                       | NA                             | 5.00    | NA                  | 5.01                                 | 5.79                                |
| 1965                                       | 4.21                        | NA                  | NA                       | NA                             | 5.00    | NA                  | 5.36                                 | 5.84                                |
| 1970                                       | 6.58                        | 8.27                | 8.68                     | 9.31                           | 5.00    | NA                  | 5.88                                 | 6.73                                |
| 1975                                       | 7.00                        | 9.02                | 8.69                     | 10.03                          | 5.00    | NA                  | 6.98                                 | 7.55                                |
| 1980                                       | 10.81                       | 13.76               | 10.39                    | 13.21                          | 11.05   | 4.82                | 8.17                                 | 9.82                                |
| 1981                                       | 12.87                       | 16.75               | 11.27                    | 15.42                          | 13.00   | 5.50                | 8.91                                 | 10.95                               |
| 1982                                       | 12.23                       | 16.63               | 12.27                    | 15.51                          | 12.94   | 6.50                | 9.60                                 | 11.31                               |
| 1983                                       | 10.84                       | 13.76               | 11.63                    | 12.47                          | 10.79   | 5.27                | 9.70                                 | 10.83                               |
| 1984                                       | 11.99                       | 14.07               | 11.76                    | 13.49                          | 10.75   | 5.25                | 9.41                                 | 10.54                               |
| 1985                                       | 10.75                       | 12.96               | 12.24                    | 12.61                          | 10.75   | 5.25                | 8.73                                 | 9.57                                |
| 1986                                       | 8.15                        | 11.56               | 11.61                    | 11.96                          | 9.13    | 5.06                | 8.76                                 | 9.39                                |
| 1987                                       | 8.64                        | 11.07               | 11.10                    | 10.21                          | 8.90    | 5.00                | 8.94                                 | 9.62                                |
| 1988                                       | 8.98                        | 11.42               | 10.10                    | 10.05                          | 9.46    | 5.00                | 9.22                                 | 9.78                                |
| 1989                                       | 8.59                        | 12.08               | 10.93                    | 10.47                          | 9.46    | 5.00                | 9.52                                 | 10.02                               |
| 1990                                       | 8.73                        | 11.69               | 10.56                    | 10.25                          | 8.94    | 5.00                | 9.58                                 | 10.11                               |
| 1991                                       | 8.16                        | 10.76               | 9.85                     | 10.01                          | 8.73    | 5.00                | 8.93                                 | 9.36                                |
| 1992                                       | 7.55                        | 9.45                | 8.25                     | 8.74                           | 8.13    | 5.00                | 8.44                                 | 8.51                                |
| I  | 7.73                        | 9.72                | 8.43                     | 9.09                           | 8.25    | 5.00                | NA                                   | NA                                  |
| II   | 7.90                        | 9.66                | 8.56                     | 9.30                           | 8.25    | 5.00                | NA                                   | NA                                  |
| III  | 7.22                        | 9.22                | 8.13                     | 8.59                           | 8.25    | 5.00                | NA                                   | NA                                  |
| IV   | 7.34                        | 9.18                | 7.86                     | 7.97                           | 7.75    | 5.00                | NA                                   | NA                                  |
| 1993                                       | 6.45                        | 8.64                | 7.83                     | 7.64                           | 7.29    | 5.00                | 7.75                                 | 8.00                                |
| I  | 6.90                        | 8.88                | 8.20                     | 8.07                           | 7.75    | 5.00                | NA                                   | NA                                  |
| II   | 6.62                        | 8.70                | 7.80                     | 7.73                           | 7.42    | 5.00                | NA                                   | NA                                  |
| III  | 6.15                        | 8.56                | 7.79                     | 7.45                           | 7.25    | 5.00                | NA                                   | NA                                  |
| IV   | 6.14                        | 8.42                | 7.54                     | 7.30                           | 6.75    | 5.00                | NA                                   | NA                                  |
| 1994                                       | 7.41                        | 9.20                | 8.57                     | 8.97                           | 7.42    | 5.00                | 7.97                                 | 8.41                                |
| I  | 6.53                        | 8.60                | 7.99                     | 7.89                           | 6.50    | 5.00                | NA                                   | NA                                  |
| II   | 7.41                        | 9.08                | 8.37                     | 8.91                           | 7.17    | 5.00                | NA                                   | NA                                  |
| III  | 7.66                        | 9.26                | 8.70                     | 9.37                           | 8.00    | 5.00                | NA                                   | NA                                  |
| IV   | 8.05                        | 9.86                | 9.21                     | 9.71                           | 8.00    | 5.00                | NA                                   | NA                                  |
| 1995                                       | 6.94                        | 9.97                | 8.95                     | 8.57                           | 7.96    | 5.00                | 8.01                                 | 8.74                                |
| I  | 7.71                        | 10.22               | 9.10                     | 9.44                           | 8.75    | 5.00                | NA                                   | NA                                  |
| II   | 7.00                        | 10.08               | 9.10                     | 8.58                           | 8.25    | 5.00                | NA                                   | NA                                  |
| III  | 6.75                        | 9.90                | 8.85                     | 8.39                           | 7.50    | 5.00                | NA                                   | NA                                  |
| IV   | 6.28                        | 9.69                | 8.74                     | 7.87                           | 7.33    | 5.00                | NA                                   | NA                                  |
| 1996                                       | 6.83                        | 9.38                | 8.08                     | 8.13                           | 7.12    | 5.00                | 8.14                                 | 8.83                                |
| I  | 6.36                        | 9.34                | 7.88                     | 7.97                           | 6.83    | 5.00                | NA                                   | NA                                  |
| II   | 7.07                        | 9.42                | 8.06                     | 7.99                           | 6.83    | 5.00                | NA                                   | NA                                  |
| III  | 7.07                        | 9.40                | 8.18                     | 8.20                           | 7.33    | 5.00                | NA                                   | NA                                  |
| IV   | 6.83                        | 9.36                | 8.22                     | 8.42                           | 7.50    | 5.00                | NA                                   | NA                                  |
| 1997                                       | 6.67                        | 9.38                | 8.28                     | 8.09                           | 7.23    | 5.00                | 8.00                                 | 8.66                                |
| I  | 6.89                        | 9.42                | 8.21                     | 8.06                           | 7.00    | 5.00                | NA                                   | NA                                  |
| II   | 7.00                        | 9.50                | 8.41                     | 8.43                           | 7.17    | 5.00                | NA                                   | NA                                  |
| III  | 6.58                        | 9.34                | 8.25                     | 7.77                           | 7.50    | 5.00                | NA                                   | NA                                  |
| IV   | 6.20                        | 9.26                | 8.23                     | 8.10                           | 7.25    | 5.00                | NA                                   | NA                                  |
| 1998P                                      | 5.26                        | 9.16                | 8.13                     | 7.45                           | 6.29    | 5.00                | 7.85                                 | 8.41                                |
| I  | 5.57                        | 9.18                | 8.34                     | 7.75                           | 6.58    | 5.00                | NA                                   | NA                                  |
| II   | 5.60                        | 9.24                | 8.35                     | 7.42                           | 6.50    | 5.00                | NA                                   | NA                                  |
| III  | 5.20                        | 9.12                | 8.28                     | 7.33                           | 6.17    | 5.00                | NA                                   | NA                                  |
| IV   | 4.67                        | 9.08                | 7.78                     | 7.28                           | 5.92    | 5.00                | NA                                   | NA                                  |

NA = Not Available. P = preliminary for commercial banks and the Farm Credit System. 1/ Unweighted average of rates on all outstanding bonds neither due nor callable in less than 10 years. 2/ New farm ownership loans. 3/ Average on outstanding farm business debt. 4/ Both real and nonreal estate loans. Note: Because of changes in the practices of agricultural lenders over time and differences in the types of loans used to calculate each lender's interest rate series, interest rates across columns and over time are roughly rather than exactly comparable.

Sources: Board of Governors of the Federal Reserve System, Economic Research Service, various Farm Credit District Banks, and Farm Service Agency.

**Appendix table 6—Selected financial indicators for the four institutional farm lender categories, 1984-98**

| Lender and date 1/     | Delinquent loans 2/    | Share of portfolio 3/ | Net loan charge-offs   | Share of portfolio 4/ | Value of acquired property 5/ |
|------------------------|------------------------|-----------------------|------------------------|-----------------------|-------------------------------|
| Farm Credit System 6/  | <i>Million dollars</i> | <i>Percent</i>        | <i>Million dollars</i> | <i>Percent</i>        | <i>Million dollars</i>        |
| 1984                   | 5,689                  | 8.7                   | 428                    | 0.5                   | 496                           |
| 1985                   | 6,465                  | 9.7                   | 1,105                  | 1.4                   | 928                           |
| 1986                   | 8,137                  | 9.4                   | 1,321                  | 1.9                   | 1,093                         |
| 1987                   | 5,749                  | 11.6                  | 488                    | 0.8                   | 873                           |
| 1988                   | 3,757                  | 7.3                   | 413                    | 0.8                   | 661                           |
| 1989                   | 2,812                  | 5.5                   | -5                     | 0.0 7/                | 461                           |
| 1990                   | 2,758                  | 5.4                   | 21                     | -0.0 7/               | 344                           |
| 1991                   | 2,420                  | 4.7                   | 47                     | 0.1                   | 409                           |
| 1992                   | 2,015                  | 3.8                   | 19                     | 0.0                   | 314                           |
| 1993                   | 1,488                  | 2.8                   | -2                     | -0.0 7/               | 187                           |
| 1994                   | 1,067                  | 2.0                   | -26                    | -0.0 7/               | 100                           |
| 1995                   | 830                    | 1.4                   | -5                     | -0.0 7/               | 59 8/                         |
| 1996                   | 673                    | 1.1                   | 48                     | 0.1                   | 50 8/                         |
| 1997                   | 628                    | 1.0                   | 27                     | 0.0                   | 29 8/                         |
| 1998                   | 897                    | 1.3                   | 13                     | 0.0                   | 29 8/                         |
| Farm Service Agency 9/ |                        |                       |                        |                       |                               |
| 1984                   | 5,086                  | 19.9                  | 117                    | 0.5                   | NA                            |
| 1985                   | 5,826                  | 20.8                  | 234                    | 0.9                   | 638                           |
| 1986                   | 6,277                  | 22.8                  | 379                    | 1.4                   | 758                           |
| 1987                   | 6,592                  | 25.6                  | 1,119                  | 4.1                   | 777                           |
| 1988                   | 8,322                  | 33.2                  | 2,022                  | 7.8                   | 633 10/                       |
| 1989                   | 8,006                  | 34.4                  | 3,229                  | 12.9                  | 609                           |
| 1990                   | 6,139                  | 31.4                  | 3,142                  | 13.5                  | 474                           |
| 1991                   | 5,508                  | 31.5                  | 2,237                  | 12.5                  | 404                           |
| 1992                   | 4,805                  | 30.9                  | 1,824                  | 11.0                  | 382                           |
| 1993                   | 4,116                  | 29.9                  | 1,702                  | 12.0                  | 344                           |
| 1994                   | 3,570                  | 28.3                  | 1,353                  | 9.8                   | 298                           |
| 1995                   | 3,199                  | 27.8                  | 1,003                  | 7.9                   | 262                           |
| 1996                   | 2,420                  | 22.9                  | 1,298                  | 11.3                  | 243                           |
| 1997                   | 2,036                  | 20.7                  | 756                    | 7.1                   | 175                           |
| 1998                   | 1,692                  | 18.5                  | 674                    | 6.9                   | 119                           |
| Commercial Banks 11/   |                        |                       |                        |                       |                               |
| 1984                   | NA                     | NA                    | 900                    | 2.3                   | 224                           |
| 1985                   | 2,380                  | 6.7                   | 1,347                  | 3.8                   | 336                           |
| 1986                   | 2,026                  | 6.5                   | 1,248                  | 4.0                   | 440                           |
| 1987                   | 1,509                  | 5.2                   | 535                    | 1.8                   | 453                           |
| 1988                   | 1,062                  | 3.6                   | 140                    | 0.5                   | 416                           |
| 1989                   | 766                    | 2.5                   | 97                     | 0.3                   | 385                           |
| 1990                   | 654                    | 2.0                   | 56                     | 0.2                   | 340                           |
| 1991                   | 694                    | 2.0                   | 137                    | 0.4                   | 341                           |
| 1992                   | 665                    | 1.9                   | 90                     | 0.3                   | 412                           |
| 1993                   | 556                    | 1.5                   | 59                     | 0.2                   | 247                           |
| 1994                   | 466                    | 1.2                   | 74                     | 0.2                   | 173                           |
| 1995                   | 493                    | 1.2                   | 63                     | 0.2                   | 149                           |
| 1996                   | 577                    | 1.4                   | 109                    | 0.3                   | 131                           |
| 1997                   | 541                    | 1.2                   | 78                     | 0.2                   | 94                            |
| 1998                   | 669                    | 1.5                   | 42                     | 0.1                   | 90                            |

**Appendix table 6—Selected financial indicators for the four institutional farm lender categories, 1984-98--continued**

| Lender and date 1/       | Delinquent loans 2/    | Share of portfolio 3/ | Net loan charge-offs   | Share of portfolio 4/ | Value of acquired property 5/ |
|--------------------------|------------------------|-----------------------|------------------------|-----------------------|-------------------------------|
|                          | <i>Million dollars</i> | <i>Percent</i>        | <i>Million dollars</i> | <i>Percent</i>        | <i>Million dollars</i>        |
| Life Insurance Companies |                        |                       |                        |                       |                               |
| 1984                     | 1,167                  | 9.6                   | NA                     | NA                    | NA                            |
| 1985                     | 1,717                  | 15.1                  | NA                     | NA                    | 692                           |
| 1986                     | 1,783                  | 17.0                  | NA                     | NA                    | 1,442                         |
| 1987                     | 1,330                  | 14.3                  | NA                     | NA                    | 1,619                         |
| 1988                     | 808                    | 8.9                   | NA                     | NA                    | 1,226                         |
| 1989                     | 426                    | 4.7                   | NA                     | NA                    | 1,110                         |
| 1990                     | 404                    | 4.2                   | NA                     | NA                    | 569                           |
| 1991                     | 364                    | 3.8                   | NA                     | NA                    | 413                           |
| 1992                     | 277                    | 3.3                   | NA                     | NA                    | 321                           |
| 1993                     | 196                    | 2.2                   | NA                     | NA                    | 135                           |
| 1994                     | 230                    | 2.6                   | NA                     | NA                    | 47                            |
| 1995                     | 250                    | 2.7                   | NA                     | NA                    | 128                           |
| 1996                     | 91                     | 0.9                   | NA                     | NA                    | 97                            |
| 1997                     | 98                     | 1.0                   | NA                     | NA                    | 7                             |
| 1998                     | 190                    | 1.8                   | NA                     | NA                    | 8                             |

NA=not available. 1/ Farm Credit System: December 31, 1984-97 and September 30, 1998; Farm Service Agency: September 30, 1984-98 (end of the Federal Government's fiscal year); commercial banks: December 31, 1984-97 and June 30, 1998; and life insurance companies: December 31, 1984-97 and June 30, 1998. 2/ Includes: for commercial banks and the Farm Credit System, loans past due 90 days or more and still accruing interest plus loans in nonaccrual status; for the Farm Service Agency only principal and interest payments more than 15 days past due; for insurance companies, loans past due 90 days or more plus those in process of foreclosure. 3/ As a percentage of all such loans held at the end of the period. 4/ As a percentage of all such loans held at the beginning of the period. 5/ Value of agricultural property acquired as the result of agricultural loan defaults and foreclosures. For commercial banks for 1984-91, the values were calculated by computing for each bank the ratio of outstanding farmland real estate loans to total outstanding loans and multiplying these ratios by the other real estate owned. Beginning in 1992 there is a direct measure of farmland owned reported in the bank Call reports. For the Farm Credit System, excludes property held by the Banks for Cooperatives. 6/ 1984 figures are not exactly comparable because this was a transition year to new accounting principles. Also, Farm Credit System guidelines changed in 1990. 7/ Less than 0.05 percent. 8/ Does not include the CoBank Agricultural Credit Bank (ACB) or the St. Paul Bank for Cooperatives, although CoBank now services several Agricultural Credit Associations (ACA's) which are direct farm lenders. 9/ Includes only data for direct Farmer Loan programs at the end of the fiscal year. Net loan charge-offs are for the fiscal year ending September 30. 10/ Decrease from the previous period may reflect changes in reporting procedures. 11/ Delinquency and charge-off data are estimates for bank-held farm nonreal estate loans. Beginning in December 1987, charge-offs do not include losses qualified for the loan deferred loan loss program. The value of acquired property column is based on real-estate-backed farm loans.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit System, and Farm Service Agency.

**Appendix table 7—Commercial bank real estate lending, by type of bank, June 30, 1998**

| Appendix table 1. Commercial bank real estate lending, by type of bank, June 30, 1998 |                  |                                   |  |   |   |               |
|---|------------------|-----------------------------------|--|---|---|---------------|
| Bank group  | Commercial banks | Real estate loans/<br>total loans | Nonperforming real estate loans/total real estate loans 1/ | Total nonperforming loans/<br>total loans | Nonperforming real estate/<br>nonperforming loans | Weak banks 2/ |
|   | <i>Number</i>    | <i>Percent</i>                    |  |   |   | <i>Number</i> |
| All banks   | 8,857            | 41.6                              | 0.9  | 0.9                                       | 42.4  | 7             |
| Agricultural  | 3,065            | 47.7                              | 1.0  | 1.1                                       | 41.4  | 3             |
| Small nonagricultural   | 5,152            | 63.7                              | 0.7  | 0.9                                       | 52.7  | 4             |
| Large nonagricultural   | 640              | 38.2                              | 1.0  | 0.9                                       | 41.0  | 0             |
| Urban   | 3,876            | 40.3                              | 1.0  | 0.9                                       | 43.0  | 2             |
| Rural   | 4,981            | 54.0                              | 0.8  | 1.2                                       | 37.5  | 5             |

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. 2/ Weak banks are banks with total nonperforming loans in excess of total capital.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

**Appendix table 8—Banks reporting nonperforming loans greater than capital, 1986-98 1/**

| Year 2/ | Agricultural banks |                | Nonagricultural banks |                | Total banks   |                |
|---------|--------------------|----------------|-----------------------|----------------|---------------|----------------|
|         | <i>Number</i>      | <i>Percent</i> | <i>Number</i>         | <i>Percent</i> | <i>Number</i> | <i>Percent</i> |
| 1986    | 158                | 3.36           | 230                   | 2.47           | 388           | 2.77           |
| 1987    | 84                 | 1.88           | 241                   | 2.67           | 325           | 2.41           |
| 1988    | 54                 | 1.25           | 238                   | 2.76           | 292           | 2.30           |
| 1989    | 31                 | 0.74           | 181                   | 2.14           | 212           | 1.68           |
| 1990    | 13                 | 0.32           | 130                   | 1.58           | 143           | 1.17           |
| 1991    | 13                 | 0.33           | 107                   | 1.35           | 120           | 1.01           |
| 1992    | 5                  | 0.13           | 55                    | 0.73           | 60            | 0.53           |
| 1993    | 2                  | 0.05           | 30                    | 0.42           | 32            | 0.29           |
| 1994    | 2                  | 0.06           | 17                    | 0.25           | 19            | 0.18           |
| 1995    | 4                  | 0.12           | 6                     | 0.09           | 10            | 0.10           |
| 1996    | 5                  | 0.15           | 4                     | 0.06           | 9             | 0.10           |
| 1997    | 4                  | 0.12           | 3                     | 0.05           | 7             | 0.08           |
| 1998 2/ | 3                  | 0.10           | 4                     | 0.07           | 7             | 0.08           |

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. Total capital includes total equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt. 2/ The 1998 numbers are as of June 30, all others are December 31.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

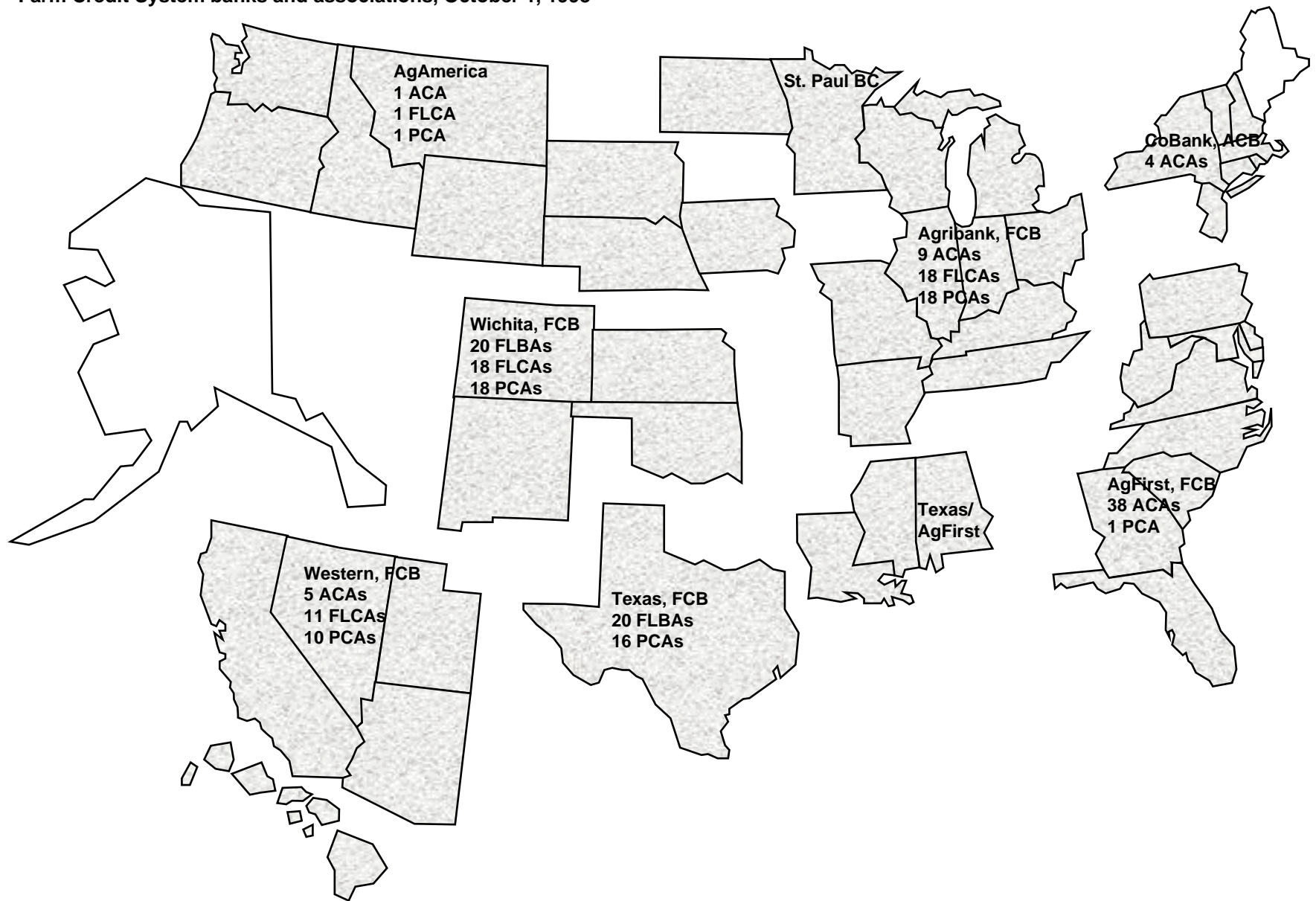
**Appendix table 9—Commercial bank failures, 1982-98 1/**

| Year    | Agricultural banks |                   | Nonagricultural banks |                   | Total banks   |                   |
|---------|--------------------|-------------------|-----------------------|-------------------|---------------|-------------------|
|         | <i>Number 2/</i>   | <i>Percent 3/</i> | <i>Number</i>         | <i>Percent 3/</i> | <i>Number</i> | <i>Percent 3/</i> |
| 1982    | 10                 | 0.19              | 23                    | 0.3               | 33            | 0.23              |
| 1983    | 7                  | 0.14              | 37                    | 0.4               | 44            | 0.31              |
| 1984    | 31                 | 0.62              | 47                    | 0.5               | 78            | 0.54              |
| 1985    | 69                 | 1.42              | 49                    | 0.5               | 118           | 0.83              |
| 1986    | 66                 | 1.41              | 78                    | 0.8               | 144           | 1.03              |
| 1987    | 75                 | 1.67              | 127                   | 1.4               | 202           | 1.50              |
| 1988    | 41                 | 0.95              | 180                   | 2.1               | 221           | 1.71              |
| 1989    | 22                 | 0.53              | 184                   | 2.2               | 206           | 1.63              |
| 1990    | 18                 | 0.44              | 141                   | 1.8               | 159           | 1.30              |
| 1991    | 10                 | 0.25              | 98                    | 1.2               | 108           | 0.91              |
| 1992    | 7                  | 0.18              | 93                    | 1.2               | 100           | 0.88              |
| 1993    | 3                  | 0.08              | 33                    | 0.5               | 36            | 0.33              |
| 1994    | 0                  | 0.00              | 11                    | 0.2               | 11            | 0.11              |
| 1995    | 0                  | 0.00              | 5                     | 0.1               | 5             | 0.05              |
| 1996    | 2                  | 0.06              | 3                     | 0.0               | 5             | 0.05              |
| 1997    | 1                  | 0.03              | 0                     | 0.0               | 1             | 0.01              |
| 1998 4/ | 1                  | 0.03              | 2                     | 0.0               | 3             | 0.03              |
| Total   | 363                | NA                | 1,111                 | NA                | 1,474         | NA                |

NA=Not available. 1/ Counts of failures exclude mutual savings banks, savings and loan associations, commercial banks not insured by the FDIC, and banks headquartered in U.S. possessions and territories. Failures are those declared insolvent and closed by their chartering authorities plus those granted open bank assistance by the FDIC. 2/ Agricultural bank status is based on June loan data from the year prior to the bank's failure. 3/ Failures during the year as a percentage of total banks of this type remaining at the end of the year. 4/ Percentages for 1998 use June 30, 1998, data on numbers of banks in the denominators.

Sources: Calculated from information provided by the Federal Deposit Insurance Corporation and the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Appendix figure 1

**Farm Credit System banks and associations, October 1, 1998\***

\* Associations affiliated with Texas, FCB, include 2 PCAs in New Mexico, 2 FLBAs in Alabama, 2 FLBAs in Mississippi, and 2 FLBAs and 1 PCA in Louisiana. Associations affiliated with Western, FCB, include 1 PCA in Idaho. Associations affiliated with AgFirst, FCB, include 1 ACA in Ohio, 2 ACAs in Kentucky, 1 ACA in Tennessee, and 1 PCA serving Alabama, Mississippi, and most of Louisiana. As of March 1, 1997 the Western and AgAmerica FCB's are jointly managed but remain separate legal entities.

Source: "Mid-Year Report", Farm Credit Administration, 1998.